

**The Purposes of Reading in late Georgian Britain: Science,
Medicine, Industry and Intellectual Culture in the Leeds
Subscription Libraries, 1768-1815**

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In memory of Gerald Limb (1931-2011)

Thank you for inspiring my love of history.

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Abstract

This study of libraries in Leeds in the late Georgian era establishes why a range of subscription libraries came into being in the town in the mid eighteenth century, and provides a localised and integrated account of how several such libraries worked within the cultural economy of a provincial town.

At the heart of this study is the question of how the Leeds libraries related to the reading and associate requirements of their first readers. Association, sociability, improvement and taste are words which usually describe the motivations for the establishment of subscription libraries but I argue for a new interpretation. The observation that a medical library was the first subscription library founded in Leeds in the eighteenth century raises the possibility that factors were at play in the decision to found these libraries other than those leisure purposes usually suggested by historians. I suggest that the Leeds libraries were founded to meet a range of practical purposes – professional, learned and industrial – as well as the leisure and other associated interests which have been discussed so widely in the prevailing literature.

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List of Abbreviations and Acronyms

<i>BJHS</i>	<i>British Journal for the History of Science</i>
<i>LI</i>	<i>Leeds Intelligencer</i>
<i>LIH</i>	<i>Library and Information History</i>
<i>ODNB</i>	<i>Oxford Dictionary of National Biography</i> (2004) http://www.oxforddnb.com/
<i>SHARP</i>	Society for the History of Authorship, Reading and Publishing

PART I

Chapter 1

Introduction

Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information upon it. When we enquire into any subject, the first thing we have to do is to know what books have treated of it. This leads us to look at catalogues, and at the backs of books in libraries. (James Boswell, *Life of Samuel Johnson*)¹

Library membership [...] may often have been less to do with gaining wider access to books than with the attractions of cordiality and conviviality (David Allan, *A Nation of Readers*)²

Subscription libraries were one of the great collective endeavours of the eighteenth century. Formed in the 'golden age' of association-based institutions, subscription libraries were 'conducted for the mutual benefit of a group of friends or joint owners', and established permanent collections of literature.³ They originated in England in Liverpool in 1758 with the formation of the Liverpool Library. This was followed by Warrington in 1760 – the Warrington Circulating Library – and Manchester in 1765 – the Manchester Circulating Library. The subscription library movement swept the north and midlands of Britain in the second half of the eighteenth century. Subsequently many of the towns which went onto become the industrial powerhouses in the north of England in the late Georgian period; Leeds, Bradford, Sheffield, Birmingham, developed subscription libraries of their own. But as yet no significant consideration has been given to the question of why these libraries particularly

¹ James Boswell, *The Life of Samuel Johnson* (London: Printed by H. Baldwin for C. Dilly, 1791), p. 487, 18 April 1775.

² David Allan, *A Nation of Readers: The Lending Library in Georgian England* (London: The British Library, 2008), p. 107.

³ Frank Beckwith, *The Leeds Library 1768-1968* (Leeds: Private Circulation, 1968; repr. Leeds: The Leeds Library, 1994), p. 3.; Paul Kaufman, *Libraries and their Users: Collected Papers in Library History* (London: Library Association, 1969), p. 209.

developed in industrial towns, and what that signifies in terms of their attractiveness to eighteenth-century readers.

Table 1 Subscription Library Development in Eighteenth-Century England

Liverpool Library	1758
Warrington Circulating Library	1760
Manchester Circulating Library	1765
Carlisle Library	1768
Halifax Circulating Library	1768
Leeds Circulating Library	1768
Lancaster Amicable Society	1769
Bristol Library Society	1773
Bradford Circulating Library	1774
Hull Subscription Library	1775
Rotherham Subscription Library	1775
Whitby Subscription Library	1775
Sheffield Book Society	1778
Birmingham Library	1779
Norwich Public Library	1784
Wakefield Circulating Library	1786
Stamford Subscription Library	1787
Wigan Subscription Library	1787
York Subscription Library	1794

The quotations at the outset of this introduction juxtapose two possible interpretations as to why these libraries were established. These two quotes, one based on an individual's own experience, and the other a generalisation based on a sweeping survey of archival records and institutional development, offer contradictory interpretations of the purposes served by libraries in the eighteenth century. The first,

by Samuel Johnson (quoted in Boswell), dates from the eighteenth century and describes libraries as information repositories, as places where knowledge can be discovered. The second, from the twenty-first century, is a modern-day historian's interpretation of an eighteenth-century library and emphasises the sociable element of these institutions.

So why were subscription libraries formed in the eighteenth century? And what were the purposes of these libraries? Were they repositories for knowledge, of books and other printed material as suggested by Johnson? Or were they Allan's places of entertainment, discussion, and gathering; a meeting site for locals drawn together by a mutual affectation for books?

A study of library development in the Georgian town of Leeds, in the West Riding of Yorkshire provides an opportunity to analyse these questions. Leeds contained four subscription libraries by 1800. A Medical Library was operating in Leeds by the close of 1768, as was the Leeds Circulating Library (hereafter Leeds Library), founded in August that year by (among others) the natural philosopher and minister of the town's dissenting Mill Hill Chapel, Joseph Priestley.⁴ To these were added a Foreign Circulating Library (hereafter Foreign Library) in the year 1778 and a New Subscription Library in 1793. A study of Leeds thus allows us to explore subscription library development across a wide range of institutions in the late Georgian period, and to ask whether they were Johnson's repositories of knowledge, or Allan's convivial associations.

One of the key purposes of this thesis is to tackle the domination of the single function approach to library history. There is a general consensus among scholars that conviviality, politeness and sociability were at the heart of the subscription library

⁴ Despite containing the term 'circulating' in its title, the Leeds Library conforms to the standard definition of a subscription library as being run both by and for their members provided on p.2 of this thesis and should not be confused with the commercial, bookseller-operated 'circulating libraries' of the eighteenth century. Confusingly for modern-day scholars many eighteenth-century 'subscription libraries' contained the term 'circulating' in their official titles. For further discussion on contemporary usage, see Allan, *A Nation of Readers*, pp. 63-65.

movement.⁵ While I do show that one of the purposes of Leeds's libraries was to provide a space whereby one could be sociable and read for pleasure and sociability, in this thesis I ask whether subscription libraries catered solely to these sorts of needs. I examine some of the other purposes of subscription libraries beyond clubbability, sociability and conviviality. I contend that subscription libraries had multiple functions and catered to many different needs and interests in eighteenth-century Leeds. I argue that many of the Leeds libraries were geared towards the educational and professional needs of their subscribers.

In order to explore concerns about the purpose of subscription libraries, this thesis considers the sorts of audiences subscription libraries catered for in the eighteenth and early nineteenth centuries. In the emerging industrial woollen town of Leeds, it asks to what extent did key occupational groups in this eighteenth-century town, the medics, merchants, manufacturers, lawyers and clergymen – occupations which have typically been identified as prominent in other subscription libraries, feature in the membership of the Leeds libraries. It will examine library membership in tandem with library collections in order to show that the Leeds libraries served a practical utility for members. It will evidence that subscription libraries were established in Leeds with the professional relevance of their membership in mind, and developed certain of their collections in response to professional demand from the subscribers. It approaches this through a discussion of the chronological development of the Leeds libraries in the eighteenth century, before turning to examine the role of reading among two identifiable groups of library subscribers in the town: those members engaged in the medical profession in Leeds and those in the manufacturing and industrial trades.

⁵ David Allan is one of a number of scholars arguing for this viewpoint: D. Allan, *A Nation of Readers*; idem, "Eighteenth-Century Private Subscription Libraries and Provincial Urban Culture: the Amicable Society of Lancaster, 1769-c.1820", *Library History*, 19 (2001), 57-76; M. Towsey, 'First Steps in Associational Reading: The Foundation and Early Use of the Wigtown Subscription Library, 1790-1815', *Papers of the Bibliographical Society of America*, 103:4 (2009) 455-95; idem, *Reading the Scottish Enlightenment: Books and their Readers in Provincial Scotland, 1750-1820* (Leiden: Brill, 2010), and F. Beckwith, 'The Eighteenth-Century Proprietary Library in England', *Journal of Documentation*, 3:2 (1947), 81-98.

Subscription libraries were founded in Britain from the mid eighteenth century in the northern industrial towns during a period of industrial enlightenment. In Leeds these libraries emerged at the start of a period of major social change. In the period 1768-1815, the very years covered in this study, Leeds underwent rapid population expansion, its population increasing from 30,000 in 1775 to 60,000 by 1811.⁶ This fundamental development which was to irreplaceably change Leeds's landscape was brought about by an influx of early industrialists.⁷ In this thesis I initiate a dialogue about the process of Leeds's early industrialisation seeking to place the emergence and development of subscription libraries in the town within the wider process of enlightenment. I seek to examine the extent to which those engaged in the emerging late eighteenth-century occupation of merchant-manufacturer, featured (or were excluded) from the town's libraries. I ask what attracted this group of eighteenth-century readers to join subscription libraries, a question that (as was made clear at the outset of this study) has not previously been considered by scholars. Was the opportunity for sociability and conviviality a key reason that led this group to join libraries, or was it some other reason, perhaps personal betterment, improvement or education? Recent literature on the industrial enlightenment places importance on efforts within individual localities, and emphasises how high levels of competency among industrialists and manufacturers at a local level contributed to the process of industrialisation on a national scale.⁸ This thesis will assert that such arguments are relevant in the case of eighteenth-century Leeds. It will examine the membership of the libraries by Leeds's early merchant-manufacturers. It will raise questions about the extent to which Leeds's subscription libraries evolved to provide a space whereby manufacturers could borrow and read literature relevant to their manufacturing

⁶ C.J. Morgan, 'Demographic Change, 1771-1911', in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 48-71 (p. 48).

⁷ The years 1783-1815 saw manufacturers overtake merchants as the leaders of industry in Leeds. R.G. Wilson, *Gentlemen Merchants: The Merchant Community in Leeds, 1700-1830* (Manchester: Manchester University Press, 1971), p. 133.

⁸ Joel Mokyr, *The Enlightened Economy: An Economic History of Britain, 1700-1850* (New Haven, Conn.; London: Yale University Press, 2009).

interests. In turn, it will consider the possibility that manufacturers used the literature in the libraries for practical purposes. Furthermore, it will argue that the Leeds libraries played an important role in contributing toward the technical knowledge and industrial competence of Leeds's merchant-manufacturers.

This thesis thus represents an opportunity to learn more about provincial life and culture in an eighteenth-century town as well as a chance to explore the way in which Leeds, a town which has been shaped both literally and metaphorically by its nineteenth-century industrial heritage, came to be that way. Ultimately, this study will demonstrate that libraries can be used as a tool with which we can examine the culture and society of the late eighteenth century.

Having in this section asked various questions and outlined numerous motives for undertaking this study of libraries and urban culture in Georgian Leeds, we now turn to look at how my research builds upon existing literature. In the following sections I explain how my research complements recent research in various historical fields, particularly the fields of library and reading history, the history of science and medicine, and urban history. I then move onto discuss some further precedents for this study, paying particular attention to the pioneering methodological approaches used by library historians such as Paul Kaufman. In turn in this third section, I highlight some of the fabulous sources available in Leeds for the study of eighteenth-century libraries, industry and medicine. Finally in this opening chapter, I set the scene for the remaining six chapters of this thesis. In the fourth section, I examine the layout of the thesis, explain my decision to split the thesis into three parts, and provide the reader with an introduction to the contents of each chapter of this study.

1.1 Libraries and the History of Reading

Once primarily viewed as the reserve of librarians, it is high time the establishment recognised that library history can make important contributions to our understanding of cultural and social history. Dedicated journals such as *Library and Information History* (formerly *Library History*) and *The Library* have maintained academic

interest in a field which at present is of national importance given that many modern-day public libraries are threatened by government cuts. Moreover the importance of library history as an academic discipline has been cemented with the publication of the complete three volume work *The Cambridge History of Libraries in Britain and Ireland* (2006).⁹ Studies of subscription libraries are equally undergoing a resurgence. Only recently there was just one lone pioneer of library studies, Paul Kaufman, but in the past decade alone David Allan, Keith Manley, James Raven, and Mark Towsey have subjected the subscription library to scholarly scrutiny.¹⁰ They have highlighted the significance of subscription libraries in eighteenth-century culture in Georgian England, Enlightenment Scotland and across the pond in Revolutionary America.¹¹

In England, our knowledge of subscription libraries stems largely from the work of cultural historian David Allan. Although best known for his work on the Scottish Enlightenment, Allan has brought much to the topic of subscription libraries, not least in his sweeping survey of readers in Georgian England in *A Nation of Readers* (2007). Alongside chapters on book clubs and circulating libraries, Allan dedicates a chapter of this work to tracing the history of subscription libraries across the length and breadth of

⁹ *The Cambridge History of Libraries in Britain and Ireland* ed. by Peter Hoare and others, 3 vols (Cambridge: Cambridge University Press, 2006).

¹⁰ D. Allan, "Eighteenth-Century Private Subscription Libraries and Provincial Urban Culture: the Amicable Society of Lancaster, 1769-c.1820", *Library History*, 19 (2001), 57-76; Allan, 'Politeness and the Politics of Culture: An Intellectual History of the Eighteenth-Century Subscription Library', *LIH*, 29 (2013), 159-169; J. Raven 'Libraries for Sociability: The Advance of the Subscription Library', in *The Cambridge History of Libraries in Britain and Ireland* ed. by Peter Hoare and others, (Cambridge: Cambridge University Press, 2006), II (2006), pp. 241-263; M. Towsey, 'All the Partners may be Enlightened and Improved by Reading Them': The Distribution of Enlightenment Books in Scottish Subscription Library Catalogues, 1750-c.1820', *Journal of Scottish Historical Studies*, 28. (2008), 20-43.; K. Manley, *Books, Borrowers, and Shareholders: Scottish Circulating and Subscription Libraries Before 1825 - a Survey and Listing* (Edinburgh: Edinburgh Bibliographical Society, 2012).

¹¹ On England, see Allan, *Nation of Readers*; On America, see J. Raven, *London Booksellers and American Customers: Transatlantic Literary Community and the Charleston Library Society, 1748-1811* (Columbia: University of South Carolina Press, 2002); On Scotland, see M. Towsey, 'First Steps in Associational Reading: The Foundation and Early Use of the Wigtown Subscription Library, 1790-1815', *Papers of the Bibliographical Society of America*, 103:4 (2009), 455-95; idem., *Reading the Scottish Enlightenment: Books and their Readers in Provincial Scotland, 1750-1820* (Leiden: Brill, 2010) and K. Manley, *Books, Borrowers, and Shareholders*.

Britain, and in doing so provides a comprehensive survey of English subscription libraries.¹² In Allan's informed analysis of over 200 institutions we move beyond Kaufman's initial discussion and tabulation of subscription library records in the 1950s, to a modern day assessment of the role subscription libraries played in Georgian England. In his overview of these institutions Allan covers important ground, discussing why and where these libraries were founded, whom by, and what collections they contained, as well as analysing their evolution throughout the long eighteenth century. In doing so, he draws significant comparisons between subscription library provision in the north of England, where subscription libraries emerged among the professional classes in the industrial towns, and their later southern counterparts, which benefitted from the patronage of the titled and landed elites. Primarily Allan views subscription libraries within wider associational trends in the eighteenth century. They represented a nation keen on improvement. They were a means to promote politeness and provincial sociability, and alongside book clubs, circulating libraries, parochial libraries and dissenting libraries were associational forms which formed 'the ideal vehicle for driving status and enhancing social cohesion through the determined pursuit of shared goals'.¹³

Throughout this thesis I draw on David Allan's pioneering scholarship in the field of library history. In particular I seek to expand Allan's argument about the associational function of Georgian subscription libraries and consider some of the other possible purposes of subscription libraries. I raise questions such as what role did they play in encouraging reading and learning among 'the nation of readers'? In turn, one of the key purposes of this thesis is to understand why subscription libraries were formed in Georgian England. I will propose, as outlined above, that their primary purpose lay in meeting the demands of their membership – providing literature relevant to their interests, be they leisurely or professional. In discussing this argument, I will assess Allan's important contribution to the field of library history and see if his arguments

¹² I refer here to Robert Alston's Library History Database
<http://web.archive.org/web/20071214010826/http://www.r-alston.co.uk/contents.htm>.

¹³ Allan, *Nation*, p. 14.

about the associational purposes of subscription libraries in eighteenth-century England bear out upon analysis at a local level in Georgian Leeds.

However, this study of subscription library development differs from Allan's in two key respects. Firstly, whereas Allan's conclusions are drawn from an analysis of a wide-range of institutions across the length and breadth of Britain, this study focuses solely on subscription libraries within a single locality, the Georgian town of Leeds. Secondly, Allan takes an institutional approach to the history of reading in the eighteenth century in *A Nation of Readers*. This approach is dependent upon analysis of the external sources of reading such as library catalogues. I argue, however, that it is only by combining the external history of reading with the internal history of reading (for instance, personal accounts contained in letters or diaries) that we can truly assess how libraries functioned and what role they played in the lives of eighteenth-century readers. For this reason, this thesis combines an institutional approach to the history of libraries and reading with a detailed analysis of the reading experiences of select individuals in eighteenth-century Leeds. Part two of this thesis examines the emergence of the subscription libraries in Leeds, while part three examines reading among some of the core users of these libraries, the medical men and manufacturers of late Georgian Leeds. This study thus represents an important attempt to integrate library history with the history of reading.

Mark Towsey's recent research into the reception of the Enlightenment in provincial Scotland lays the groundwork for this sort of combined approach to library and reading history. Through an analysis of Scottish subscription libraries and their records, Towsey traces how the Enlightenment was received and consumed textually by Scotland's wider reading public. Like Allan, Towsey argues subscription libraries were provincial hubs of improvement and politeness reflective of the wider intellectual movement of the Scottish Enlightenment, but significantly he recognises that libraries were a functional vehicle through which one could access books.¹⁴ This thesis seeks to

¹⁴ M. Towsey, *Reading the Scottish Enlightenment*; idem, 'All Partners May be Enlightened'.

examine this function of the subscription library, and will build upon important questions raised by Towsey about the purpose of these institutions. We must ‘know what they were, where they were and who was involved in this kind of enlightened activity’.¹⁵

Towsey’s progressive approach to Scottish subscription libraries – like my own study of library provision in Leeds – considers the members and collections of Scottish subscription libraries in tandem. This method of analysis yields some significant findings, including the revelation that that the collections of the libraries were geared towards the needs of the subscribers. For instance, many Scottish subscription libraries contained books on agricultural improvement, reflective of a membership base which consisted of tenant farmers and landholders – alongside the ‘rank-and-file’ membership of merchants and tradesmen.¹⁶ While Towsey argues that the library collections primarily consisted of works promoting intellectual politeness, he does concede that they ‘promoted Scottish science at the cutting edge of contemporary research’, and contained scientific books suited to the practical application of knowledge by their readers.¹⁷ In this thesis, the scientific collections of the Leeds libraries will form a core part of the analysis of chapters four and six, as I show that Leeds’s subscription library collections developed to meet a growing demand from subscribers with practical interests in manufacturing and commerce.

1.2 Reading and the ‘Industrial Enlightenment’

In considering the question of whether the books in the Leeds libraries were read, I am by consequence suggesting that the establishment of subscription libraries had some higher purpose than to simply form a gentlemanly collection of works. In

¹⁵ ‘All Partners May be Enlightened’, p. 22.

¹⁶ Towsey, *Reading the Scottish Enlightenment*, pp. 72-75; Towsey discusses this further in ‘Store their Minds with Much Valuable Knowledge’: Agricultural Improvement at the Selkirk Subscription Library, 1799-1814’, *The Journal for Eighteenth-Century Studies* (forthcoming). I am grateful to the author for allowing me to view an advance copy of this publication.

¹⁷ Towsey, ‘All Partners May be Enlightened’, p. 35.

effect, in this thesis I am seeking to establish the way that libraries helped circulate knowledge in Georgian Britain. That is, to physically trace the ways in which knowledge was transferred and communicated from author to reader through the medium of books. In doing so, I am placing libraries within a large body of scholarship in book history, not least Robert Darnton's well-known conceptual framework of a print 'communication circuit', featured in his article 'What is the History of Books?'.¹⁸

In line with this growing emphasis on the communication of knowledge through print, one body of readers with whom I am particularly concerned in this study are manufacturers. Subscription libraries first emerged in the port and industrial towns in the north of England but I was surprised to find in my researches that scant attention has been paid to the role of manufacturers in the institutions. Given that subscription library development and industrialisation were effectively parallel movements, surely it is necessary to consider the connections between the two. Might we for instance go so far as to suggest that the rise of subscription libraries in the northern towns were (in some currently unknown way) connected with the process of industrialisation in late Georgian England? Meanwhile, traditional accounts of eighteenth-century libraries depict them as geared toward sociability and politeness rather than as having any practical purpose. In these complementary ways, both of these historiographies have written out the possibility that the growth of libraries was connected in any way with industrial development.

While this might initially seem like a large leap of faith, if we bear in mind recent researches by historians of science it is not so implausible a suggestion. As Jonathan Topham noted in his keynote lecture 'Why the History of Science Matters to Book History' (SHARP, 2011), book historians should take note of 'recent historiography of science [which] has re-emphasized the extent to which processes of communication – and very notably communication in print – are inseparable from the making of

¹⁸ Robert Darnton, 'What is the History of Books?', *Daedalus* 111/3, (1982), 65-83.

knowledge'.¹⁹ Topham's own published work on the history of science and reading forms a substantial part of this historiography, and he advocates for scholars to trace 'a history of scientific reading', one that focuses beyond the 'scientists' themselves to 'the wide range of other users' who read scientific publications.²⁰ This thesis considers such a history of scientific reading in chapter six in the analysis of the reading habits of manufacturers. Moreover in his keynote lecture, Topham identified two areas of research where historians of science have surpassed their colleagues in book history (and which would greatly enrich the historiography of the latter) – namely 'books for learning and books for working'.

In re-appraising the purposes of subscription libraries, we need to consider the argument that these institutions provided a space beyond mere sociability or polite improvement. The phrase 'books for working' in particular could provide a worthy answer to the question of why subscription libraries emerged in the northern industrial towns in late Georgian England. As I will show in this thesis, subscription libraries were places where you could access useful and technical information. For some members at least, books were borrowed to aid in self-learning and work. While this theory will be an important consideration in assessing why it was a medical library that emerged in Leeds in 1768, it is particularly relevant when thinking of why specific bodies of readers might have joined subscription libraries in Leeds and elsewhere.

If we return to consider manufacturers for a moment, 'books for working' is a concept which nicely highlights why this group might have had need to join subscription libraries in the late eighteenth century. For a number of years now, historians of science working in economic history have challenged traditional assumptions about the process

¹⁹ 'Why the History of Science Matters to Book History' (Unpublished keynote lecture, SHARP annual conference, Washington DC, 2011). I am grateful to Jonathan Topham for allowing me to view a copy of this lecture.

²⁰ J. Topham, 'A View from the Industrial Age', *Isis*, 95 (2004), 431-442, (436-438); idem, 'Scientific Publishing and the Reading of Science in Nineteenth-Century Britain: A Historiographical Survey and Guide to Sources', *Studies In History and Philosophy of Science*, 31:4 (2000), 559-612.

of industrialisation in Britain. While once we viewed industrialisation as the product of ‘semi-literate tinkers’, encouraged by the pioneering scholarship of Albert Musson and Eric Robinson, scholars in this field now closely associate the process of industrialisation with science.²¹ The roots of industrialisation lay among enterprising industrialists possessed of ‘scientific and technical knowledge’.²² This thesis considers how scientific knowledge came to be in the hands of industrial entrepreneurs through the circulation of scientific knowledge in books and libraries. But historians of industrialisation have not yet recognised the importance of printed material in the communication of scientific knowledge in the eighteenth century. Instead their focus has been on the oral communication of scientific knowledge, for instance at the natural philosophy lectures that were held in Manchester, Sheffield and other industrial towns in the late eighteenth century.²³ Or, alternatively on the sharing of knowledge among peers in the various scientific societies that emerged in eighteenth-century Europe.²⁴ Yet scientific knowledge was also learnt from childhood - education was a tool by which science entered into the general consciousness. There is currently a project ongoing at Leeds that examines the proliferation of scientific schoolbooks in the eighteenth century and its results will no doubt further highlight just how widespread the culture of scientific education was in the eighteenth century.²⁵ Leading on from this point, and importantly for the purposes of this study, Jonathan Topham has recently argued that a purely

²¹ A.E. Musson and E. Robinson, *Science and Technology in the Industrial Revolution* (Manchester: Manchester University Press, 1969).

²² A. E. Musson, and E. Robinson, ‘Science and Industry in the Late Eighteenth Century’, *The Economic History Review*, 13:2 (1960), 222-244, (244).

²³ Ian Inkster, ‘Culture, Institutions and Urbanity: The Itinerant Science Lecturer in Sheffield 1790-1850’, in *Essays in the Economic History of South Yorkshire*, ed. by S. Pollard and C. Holmes (Sheffield, 1976), pp. 218-232; idem, ‘The Public Lecture as an Instrument of Science Education for Adults – The Case of Great Britain, c. 1750-1850’ *Paedagogica Historica*, 20:1 (1980), 80-107. In this latter article Inkster notes that a programme of reading was often set in addition to attendance at the lectures. p. 83.

²⁴ Take for instance the Derby Philosophical Society which has been the subject of the following studies: Eric Robinson, ‘The Derby Philosophical Society’, *Annals of Science*, 9:4 (1953), 359-367, and RP Sturges, ‘The Membership of the Derby Philosophical Society, 1783-1802’, *Midland History*, 4:3 (1978), 212-229.

²⁵ Jo Elcoat is reading for a PhD on Scientific Schoolbooks in Georgian Britain.

scientific body of literature geared towards those in the arts and manufactures emerged in the late Georgian period.²⁶ In this thesis I seek to show that such literature was available in the Leeds libraries and in frequent use by members among the manufacturing community.

In recent years, Musson and Robinson's influential thesis has advanced beyond Manchester. The broad concept of an 'industrial enlightenment' has been acknowledged by economic historians such as Joel Mokyr and Adam Goldstone who reason that there was an enlightened knowledge economy in Britain in the industrial period.²⁷ Moreover, in the past decade Margaret Jacob has specifically extended Musson's and Robinson's thesis to include manufacturers in the town of Leeds.²⁸ Jacob argues in her influential article 'Mechanical Science on the Factory Floor' that intellectual knowledge was at the forefront of advances in industrial innovation in the eighteenth century. More particularly she argues that the manufacturers leading the push towards industrialisation in late Georgian Leeds were both scientifically and technically literate. For instance, she claims flax-spinner John Marshall (1765-1845), was a 'mechanically literate entrepreneur', who had mastered the latest 'scientific knowledge'.²⁹ We will explore John Marshall's scientific and technical knowledge in more detail in chapter six of this thesis. In the meantime, Jacob argues a 'cultural vocabulary' of science was acquired in Leeds predominantly through attendance at natural philosophy lectures. She

²⁶ See for instance Jonathan Topham, 'Anthologizing the Book of Nature: The Circulation of Knowledge and the Origins of the Scientific Journal in Late Georgian Britain', in *The Circulation of Knowledge Between Britain, India and China: The Early-Modern World to the Twentieth Century*, ed. by Bernard Lightman, Gordon McOuat, and Larry Stewart (Leiden and Boston: Brill, 2013), pp. 119-152 (p.126); idem, 'Science, Print and Crossing Borders: Importing French Science Books into Britain, 1789-1815', in *Geographies of Nineteenth Century Science*, ed. by David N. Livingstone and Charles Withers (Chicago: Chicago University Press, 2011), pp. 311-344.

²⁷ Joel Mokyr, *The Gifts of Athena: Historical Origins of the Knowledge Economy* (Princeton, NJ; Oxford: Princeton University Press, 2002); *Enlightened Economy*.

²⁸ Margaret C. Jacob, *The First Knowledge Economy: Human Capital and the European Economy, 1750-1850* (Cambridge: Cambridge University Press, 2013); idem, 'Mechanical Science on the Factory Floor: The Early Industrial Revolution in Leeds', *History of Science* 45:2, (2007), 197-221.

²⁹ Jacob, 'Mechanical Science', p. 207; 209.

mentions too, albeit in passing, that Leeds manufacturers were well-versed in the latest published scientific literature, including work on chemistry direct from the continent.³⁰

Jacob's work on Leeds gives rise to a number of important observations and questions. In particular, her work offers further possibility to the theory that the process of industrialisation was inculcated through printed matter. Specifically in Leeds, it also gives rise to the question of where manufacturers including John Marshall were able to obtain and access scientific and technical literature. Understandably, this is not a question Jacob contemplates, but it is surely an important consideration, particularly given that she focuses on the years 1780-1830 – a period which included the Napoleonic Wars, and which Jonathan Topham has shown was marked by continental blockades and a ban on the importation of books from France.³¹

So where were Leeds manufacturers accessing works of scientific literature? Of course one possibility to consider is that technical and scientific works may have featured in the personal collections of manufacturers. On the other hand, I use this thesis as an opportunity to argue for the important role subscription libraries played in eighteenth-century society and particularly the scientific culture of eighteenth-century society. I will show that subscription libraries acted as a pool of printed knowledge for groups like manufacturers who needed access to intellectual and useful knowledge for the purposes of their work. They contained, along with works of polite literature and improvement, 'books for learning and working'. In Leeds, I will show that manufacturers accessed scientific and technical works by the likes of Lavoisier and Berthollet (authors Jacob's mentions in passing that Leeds manufacturers had read) featured in the collections of the town's subscription libraries. In turn, I will suggest that the often prohibitive cost of scientific and technical literature meant it was only through membership of collaborative reading ventures such as subscription libraries that manufacturers could actually access this sort of literature. Thus a key argument in this

³⁰ *Ibid.*, pp. 209-210.

³¹ Topham, 'Science, Print and Crossing Borders'.

thesis is that subscription libraries had an important cultural role to play in the eighteenth century, and were in Leeds at least (if not elsewhere) a vital link in the process by which manufacturers became scientifically and technically informed.

Another major finding of Jacob's recent scholarship has been her acknowledgement that 'the material from Leeds affirms [...] a specifically scientific culture' in the late Georgian town.³² Indeed Jacob's study is amongst a wealth of scholarship that has emerged on scientific culture in the eighteenth century since the publication in 1969 of Musson's and Robinson's ground-breaking study *Science and Technology in the Industrial Revolution*.³³ Local studies by Ian Inkster, Jenny Uglow, Robert Schofield and Paul Elliott among others, have shown the prevalence of scientific cultures in eighteenth-century provincial towns ranging from the industrial communities of Birmingham, Sheffield, Liverpool and Derby, to Bath and beyond.³⁴ But this has passed Leeds by. Until the publication of Jacob's research, interest in Leeds's scientific

³² Jacob, 'Mechanical Science', p. 199.

³³ Roy Porter, 'Science, Provincial Culture and Public Opinion in Enlightenment England', in *The Eighteenth-Century Town: A Reader in English Urban History, 1688-1820*, ed. by Peter Borsay (London: Longman Group, 1990), pp. 243-267; Ian Inkster, 'Introduction: Aspects of the History of Science and Science Culture in Britain, 1780-1850 and Beyond', in *Metropolis and Province: Science in British Culture, 1780-1850*, ed. by Ian Inkster and Jack Morrell, (London: Hutchinson, 1983), pp. 11-54; Margaret C. Jacob, *Scientific Culture and the Making of the Industrial West*, (Oxford: OUP, 1997); Paul Elliott, *Enlightenment, Modernity and Science: Geographies of Scientific Culture and Improvement in Georgian England* (London: I.B. Tauris, 2010).

³⁴ On Birmingham: Robert E. Schofield, 'The Industrial Orientation of Science in the Lunar Society of Birmingham', *Isis*, 48 (1957), 408-15; idem, *The Lunar Society of Birmingham: A Social History of Provincial Science and Industry in the Eighteenth-Century England* (Oxford: Clarendon Press, 1963); Jenny Uglow, *The Lunar Men: The Friends Who Made The Future, 1730-1810* (London: Faber and Faber, 2002). On Derby: Paul Elliott, 'The Birth of Public Science in the English Provinces: Natural Philosophy in Derby, c. 1690-1760' *Annals of Science*, 57:1 (2000). On Sheffield: Ian Inkster, 'The Development of a Scientific Community in Sheffield, 1790-1850: A Network of People and Interests', *Transactions of the Hunter Archaeological Society* 10 (1973), 99-131; On Liverpool: Ian Inkster, 'Scientific Culture and Scientific Education in Liverpool prior to 1812 – A Case Study in the Social History of Education' in *Scientific and Technical Education in Early Industrial Britain*, ed. by M.D. Stephenson and G.W. Roderick, (Nottingham, 1981), pp. 291-330; G. Kitteringham, 'Science in Provincial Society: the case of Liverpool in the early nineteenth century' *Annals of Science* 39 (1982) 329-448. On Bath: Peter Borsay 'Bath: An Enlightenment City?' in *New Directions in Urban History: Aspects of European art, health, tourism and leisure since the Enlightenment*, ed. by Peter Borsay, Guntham Hirschfelder and Ruth. E Mohrmann (New York: Munster, 2000), pp. 3-18.

culture had primarily been confined to the nineteenth century and the manifestation of scientific societies in the town, including a philosophical and literary society in 1819 and a Mechanics Institute in 1824.³⁵ It is clear that historians need now to concentrate their efforts on an earlier period. Specifically, the scientific culture of eighteenth-century Leeds.

This study of Leeds's eighteenth-century subscription libraries allows us an insight into the possible origins of scientific culture in Georgian Leeds. For instance Joseph Priestley, the natural philosopher, was closely associated with the subscription library movement in Leeds during his time as incumbent at Mill Hill Chapel. Many sources cite Priestley as the founder of the Leeds Library, and I discuss Priestley's role in that institution in chapter three, but I raise the additional possibility in this thesis that we might also regard Priestley's interest in establishing a library in the town as an extension of his interest in science. Did Priestley encourage a scientific culture in the town? He certainly collaborated on experiments with William Hey (a local surgeon whom we study further in chapter five), who notably went onto establish an (admittedly short-lived) philosophical society in Leeds between the years 1783 and 1787.³⁶ Indeed, an additional purpose of this thesis is to consider whether the interest in natural philosophy that seemingly emerged in the town in the 1780s was present in an earlier period in the town's subscription libraries. Had the scientific and technical books present

³⁵ The history of Leeds's Philosophical and Literary Society museum collection is currently the subject of a thesis by Mark Steadman, a fellow PhD student of mine at the University of Leeds. In the meantime, see E. Kitson Clarke, *The History of 100 years of Life of the Philosophical and Literary Society* (Leeds: Jowett & Sowry: 1924). On the Mechanics Institute see A. D. Garner & E. W. Jenkins 'The English Mechanics' Institutes: The case of Leeds 1824-42', *History of Education: Journal of the History of Education Society*, 13:2 (1984), 139-151.

³⁶ Priestley wrote of Hey, "The only person in Leeds who gave much attention to my experiments was Mr Hey, a surgeon. He was a zealous methodist & wrote answers to some of my theological tracts, but we always conversed with the greatest freedom on philosophical subjects, without mentioning anything relating to theology." *Memoirs of Dr. Joseph Priestley to the year 1795* (London, printed for J. Johnson, 1806), p. 57. In William Hey's biography (written by his former apprentice John Pearson) the relationship between these two gentlemen is discussed on pp. 38-40, and the Philosophical and Literary society on pp. 51-53. See John Pearson, *Life of William Hey* (London: Hurst, Robinson & c., 1822).

in the libraries in the late eighteenth century been a feature of the subscription libraries since their outset – encouraged by the likes of Joseph Priestley? Did a wider interest in scientific culture in Leeds manifest itself in the libraries' collections? Such questions lead us yet again to the possibility that one of purposes of the town's subscription libraries was to provide their members with access to useful knowledge, be it scientific or technical knowledge. Whether this was a primary or secondary purpose of the libraries remains to be seen. Still, we must ask such questions in order to place Leeds, and specifically its subscription libraries, within the literature on the wider knowledge economy of the eighteenth century that I have described in this section.

Throughout the thesis I thus consider Leeds subscription libraries as part of the wider movement of scientific communication that took place in the late Georgian period and not just as individual institutions. They must, as I will show, be placed alongside the other sources of scientific knowledge in the eighteenth century, such as the itinerant lecturers who spread Newtonian physics, or the scientific societies where science was discussed and debated among equals and friends.

1.3 Urban History

At a recent colloquium on 'Libraries in The Atlantic World, 1650-1850', book historian James Raven repeatedly called for a microhistory approach to the history of books, libraries and reading.³⁷ Micro-histories are specific and in-depth case studies that help illuminate historical concepts and can usefully be applied to aid our understanding of eighteenth-century subscription libraries, print culture, and provincial culture more generally. This study of subscription library provision in the industrialising town of Leeds between 1768 and 1815 takes this sort of local approach to library history, with the intention of generalising its findings in the wider context of eighteenth-century urban history.

³⁷ James Raven 'Libraries in the Atlantic World 1650-1850', Colloquium 3, London 22-24 January 2015.

Current scholarship in urban history places subscription library development firmly in the associational culture of the eighteenth century. Subscription libraries and other similar reading institutions were part of the late eighteenth-century culture of improvement prevalent among the middling sorts of society who sought to emulate the culture and refinement associated with their upper class counterparts; 'nothing unified the middling orders so much as their passion for aping the manners and morals of the gentry more strictly defined, as soon as they possessed the material means to do so.'³⁸ This group formed institutions and associations for discussion and sociability, and were informed in their discussions by a print culture centred upon politeness and taste (the inward and outward expressions and behaviours of an improving culture) emanating from London. This geographically all-encompassing interpretation of eighteenth century culture still largely dominates our understanding of the eighteenth century today.³⁹

Subscription libraries were a national phenomenon in the mid to late eighteenth century. Originating in the Liverpool Library of 1758, they were a provincial movement that swept the country in the late Georgian era: London did not gain a subscription library until the London Library Society of 1785. Thus by applying notions of improvement and politeness to the development of subscription libraries, library historians have been able to explain the shared culture of subscription library provision

³⁸ Paul Langford, *A Polite and Commercial People: England 1727-1783* (Oxford: Clarendon Press, 1989), p. 67.

³⁹ See for instance Maxine Berg, *Luxury and Pleasure in Eighteenth-Century Britain* (Oxford: Oxford University Press, 2005); John Brewer, *The Pleasures of the Imagination: English Culture in the Eighteenth Century* (London: Harper Collins, 1997); Peter Borsay, 'The Culture of Improvement' in *The Eighteenth Century 1688-1815*, ed. by Paul Langford (Oxford: Oxford University Press, 2002), pp. 181-210; idem, *The English Urban Renaissance: Culture and Society in the Provincial Town 1660-1770* (Oxford: Clarendon Press, 1989); Philip Carter, *Men and the Emergence of Polite Society, Britain 1660-1800* (Harlow: Pearson Education Limited, 2001); Lawrence E. Klein, 'Politeness and the Interpretation of the British Eighteenth Century', *Historical Journal*, 45:4 (December 2002), 869-898; Paul Langford, *A Polite and Commercial People*; idem, *Public Life and the Propertied Englishman, 1689-1798* (Oxford: Clarendon Press, 1991).

throughout the provinces in eighteenth-century Britain. On the other hand, this generalised approach does not allow for the diversity of eighteenth-century culture and regional variation. This problem is especially acute in relation to subscription libraries, which were manifestly northern entities.

Recently historians have levelled criticism at the notion of ‘improvement’, in what they see as a London-centred, metropolitan broad-brush approach to eighteenth-century history.⁴⁰ Whilst John Brewer argues eighteenth-century culture was London-centred – ‘culture travelled only one way, out from London rather than in from the provinces’, other historians, notably Maxine Berg, emphatically see the industrial towns of Birmingham, Sheffield, Leeds and Manchester as ‘not poorer copies of London, but distinctive centres of intellectual ferment’.⁴¹ In her study ‘Smoke cities’, Hannah Barker, like Berg, argues that the late eighteenth century marked an intellectual and cultural awakening for northern towns such as Manchester, Leeds and Sheffield.⁴² These towns expanded as part of ‘a second wave’ of Peter Borsay’s ‘urban renaissance’ but with a peculiarly northern ‘civic consciousness’ and ‘very different characteristics’ to Borsay’s ‘elite-led’ Warwick, Bath and Winchester focussed study.⁴³ Barker demonstrates that it was the middling sorts of society who were responsible for developing civic culture in northern towns through the building of assembly rooms, and the implementation of improving measures such as street widening. While her analysis of the burgeoning print culture and newspaper advertisements in Manchester, Leeds and Sheffield reveals considerable parallels in the development of these towns as centres for civic

⁴⁰ A major criticism of Borsay’s work can be found in Jonathan Barry, ‘Provincial town culture, 1640–1780: urbane or civic?’, in *Interpretation and Cultural History*, ed. by Joan H. Pittock and Andrew Wear (Basingstoke, 1991), pp. 198-233; For Borsay’s response to this essay, see Peter Borsay and Lindsey Proudfoot, ‘The English and Irish Urban Experience, 1500-1800: Change, Convergence and Divergence’, in *Provincial Towns in Early Modern England and Ireland: Change, Convergence and Divergence* (Oxford: Oxford University Press, 2002), pp. 1-28, (p. 19).

⁴¹ John Brewer, *Pleasures of the Imagination*, p. 494 Berg, *Luxury* p. 211.

⁴² Hannah Barker, ‘Smoke cities’: northern industrial towns in late Georgian England’ *Urban History* 31:2, (Cambridge: Cambridge University Press, 2004), 175-190.

⁴³ Peter Borsay, *English Urban Renaissance*; Barker, ‘Smoke Cities’, pp. 176-177.

improvement and consumption – they were, she states, ‘regional service centres’.⁴⁴ This study of Leeds, like that of Barker on the ‘Smoke Cities’ provides an opportunity to study the development of urban culture in the late eighteenth century through the medium of print culture and the creation of a middling sort identity. Chapter two in particular considers this theme in relation to the question of what led to subscription library development in the town in the year 1768. This chapter places particular emphasis on the middling sorts of Leeds society and argues that we can see subscription libraries in Leeds emerging from their investment, modifications and improvements to local urban and civic culture, as well as wider national developments in print culture.

John Money’s 1977 study of Birmingham and the West Midlands in the eighteenth century also explores the particularities of provincial culture. *Experience and Identity* considers the emergence of Jacobinism and other radical British politics in the late eighteenth century through the medium of print culture. In *Experience and Identity* Money demonstrates a relationship between the growth of print culture in the region (and its related institutions) and the creation of a local civic consciousness and ‘the creation of opinion’.⁴⁵ He shows how a local political consciousness emerged and was diffused through various channels among local and regional society before eventually feeding into social, economic and political change at a national level. Moreover, Money argues that it is only by studying one particular locality that wider provincial, regional and national developments can be ‘fully illuminated’.⁴⁶ Like Money’s study of Birmingham and the West Midlands, I use subscription library development and provision in late Georgian Leeds as a means through which to consider wider economic

⁴⁴ Barker, ‘Smoke Cities’, p. 180. Recent studies of Georgian regional identity include *Creating and Consumer Culture in North-East England* ed. by Helen Berry and Jeremy Gregory (Ashgate: Aldershot, 2004); *Towns, Regions, Industries: Urban and Industrial Change in the Midlands, c. 1700-1840* ed. by Neil Raven and Jon Stobart (Manchester: Manchester University Press, 2005); Paul Elliott, *Enlightenment, Modernity and Science*.

⁴⁵ *Ibid.*, pp.51-52.

⁴⁶ John Money, *Experience and Identity: Birmingham and the West Midlands 1760-1800* (Manchester: Manchester University Press, 1977), p. vi.

and social developments in the town in the period in which it transitioned from a merchant town to a regional hub for manufacturing and industry.

This study of Leeds will, for instance, provide an insight into the culture of medical improvement in the town, thereby providing a parallel study to Michael Brown's recent study of the medical society and culture of early nineteenth-century York.⁴⁷ In Leeds, the establishment of a medical library in 1768 and a study of its collections allows us to explore how developments in print culture impacted upon and helped aid medical provision and treatment in Leeds. In chapter five, an analysis of William Hey's reading habits helps show how a national culture of improvement in medicine was communicated to medical men through print and in turn how it was implemented at a local level by Hey and his colleagues, creating a local sense of community among medics. In turn we see how different networks of medical communication, including print and oral and written correspondence, meant that these gentlemen were able to contribute to the ongoing transformation of medicine in the eighteenth century.

It is not just the relationship between print culture and medicine that we explore in this thesis. This study provides an opportunity to shed light on the processes of early industrialisation in Leeds. This thesis will argue that libraries were more than mere institutions for polite sociability. It will show that they were representative of the interests of the middling sort among society and reflected urban growth and change, including the process of early industrialisation. We will see for instance, in chapters three and four, how book choices in the libraries from their outset reflected library members' practical and work-related interests, particularly in science and industry. In turn, in chapter six we see how libraries and print culture in Leeds helped inform the process of industrialisation in the town among certain merchant-manufacturers. Here we will study flax-spinner John Marshall's reading habits and explore his utilisation of subscription library collections relevant to his interest in manufacturing and commerce.

⁴⁷ Michael Brown, *Performing Medicine: Medical culture and identity in provincial England, c.1760-1850* (Manchester: Manchester University Press, 2011).

Following on from this, we will see how print culture contributed to communication of ideas relevant to industry and enabled Marshall and others to develop new machinery and ideas. Ultimately then, this study of subscription libraries in Leeds will aid our understanding of the cultural history of Leeds in the late Georgian period.

1.4 Research Methods and Materials

The inherent problem with reading, as Chartier points out, is that it 'only rarely leaves traces... is scattered in an infinity of singular acts, and... easily shakes off all constraints'.⁴⁸ Recovering historical reading practices is 'by no means a straightforward process'.⁴⁹ How then does one go about tracing the experiences of readers?

One means of tracing the history of reading is to analyse the institutions that existed for the dissemination of print culture. Library catalogues, minute books, subscription lists, lists of laws and other such surviving archival records of these institutions can reveal a number of insights about print culture and reading trends in particular periods of history. These external sources for the history of reading form the evidential basis for the discussion in the third and fourth chapters of this thesis. These chapters on the formation and development of subscription libraries in Georgian Leeds utilise the extant archival sources of the Leeds libraries to show how and why libraries were formed in Leeds, what sorts of people used libraries, and what books were popular amongst the collections. The Leeds Library, for instance, retains its original catalogue, list of laws and subscribers dating from the end of its first year of operation in 1768, a number of other published catalogues, supplements, a minute book of its committee meetings, an order book of the library (1811-1832) and various receipts and other ephemera. Occasional published catalogues of the collections of the New Subscription Library and the Foreign Circulating Library survive intact, and for the Medical Library a single published catalogue and an extant borrowers ledger (1802-1827) survive. It is also

⁴⁸ R. Chartier, *The Order of Books: Readers, Authors and Libraries in Europe between the Fourteenth and Eighteenth Centuries* transl. L.G. Cochrane (Cambridge, 1994), pp.1-2.

⁴⁹ Towsey, *Reading the Scottish Enlightenment* p. 13.

possible to reconstruct some of the purchases made by both the Medical Library and the New Subscription Library in the early nineteenth century between 1806 and 1811, years for which extant booksellers' receipts contained in the archive of the Lupton family in Special Collections at the University of Leeds list the purchases made jointly by these institutions.

Although these sorts of archival sources can help our bid to re-create the history of reading, we can only make speculative conclusions about reading tastes in the eighteenth century from an analysis of these documents. For instance, in chapters three and four of this thesis I trace the medical and scientific collections of the Leeds libraries and argue that the presence of these collections in the library suggest certain groups of subscribers utilised the collections of the library for professional purposes, but relying on the contents of library catalogues alone does not tell us whether a book in this collection was read.

To trace a reader's engagement with a particular book, or books, the 'evidence for lives of reading... should come... wherever possible, from documentary sources: marginalia, notebooks, commonplace books, diaries, anecdotes, letters and casual, conversational remarks.'⁵⁰ Only these sources can tell us whether a book was read or a library collection was utilised, and by whom. Thus part of the difficulty in recovering the internal history of reading by eighteenth-century individuals is the scarcity of evidence and the labour intensive nature of the research. Chapters five and six of this engage in this methodology and take a biographical approach to the history of reading. These chapters exploit records of individual reading in manuscript resources including diaries, letters and notebooks in relation to a small number of individuals in order to explore the question of whether scientific reading mattered to manufacturers and medical men.

In this thesis, I therefore use a variety of resources, from library catalogues and printed receipts, to notebooks, letters and personal testimony to recreate library

⁵⁰ Robert DeMaria Jr, *Samuel Johnson and the Life of Reading* (Baltimore: The Johns Hopkins University Press, 1997), p. 2.

subscribers' personal experiences of reading and to reconstruct the history of reading and print culture in eighteenth-century Leeds. Taken together, these extant sources provide ample opportunity to develop a complex framework on the purposes of subscription libraries and reading than has previously proven possible.

1.5 Overview

The thesis consists of three parts, which consider the history of Leeds (part I), libraries (part II), and reading habits in the town (part III). Part I consists of chapter two which provides an overview of the literary and cultural context to the establishment of subscription libraries in Leeds in the Georgian era. This chapter argues that the origin of the subscription library movement in Leeds can be found in middle class investment in the town, in a number of institutions for reading and sociability in Leeds in the period prior to 1768, and in the growing availability of books and printed literature in the town, cemented by the rise of the local print trade.

Part II considers library formation and development in late Georgian Leeds. In chapter three we look at the establishment of subscription libraries in the town. The narrative begins in 1768, the year subscription libraries were first founded in Leeds. The libraries of eighteenth-century Leeds – the Medical Library, Leeds Library, Foreign Library and New Subscription Library – are introduced in turn to the reader. We ask why these four libraries were founded, by whom, and with what purpose. Chapter four considers the organisation of the Leeds libraries in the years following their establishment in the town. The questions which frame this chapter are: how did the libraries function beyond their establishment? Who used them? How did they use them? And how did this usage change over time?

Part III consisting of two chapters, explores the reading habits of two key groups of library subscribers, namely medical men and merchant-manufacturers. Chapter five considers the reading experience of the Leeds surgeon William Hey. The questions asked in this chapter are: to what extent did professional needs dominate the reading and interrelated habits of subscribers such as medical men? Was reading

medical literature an important means by which one could acquire new and useful medical knowledge? Was it a continuation of the education of eighteenth-century medical men? Was it the only means by which such knowledge could be acquired in Leeds? And to what extent did other medical men in eighteenth-century Leeds use medical print culture to acquire new knowledge?

Similar questions are raised in chapter six which examines the role of the scientific collections of the Leeds libraries in relation to the reading habits of Leeds's industrialists. The chapter begins by investigating the reading habits of John Marshall, Leeds manufacturer. I will demonstrate that Marshall was relying on the scientific collections of the Leeds libraries to inform his experimentation on flax spinning and bleaching. We then examine the extent to which Marshall was part of a wider group of interested bodies relying on the scientific collections of the Leeds libraries to aid his manufacturing empire.

The thesis concludes with a return to a discussion of wider themes in eighteenth-century Britain. The final chapter suggests that the formation of libraries in the eighteenth century was part of a wider move toward association, reading and the enlightenment in Georgian Britain. It also reflects more broadly on the wider implications of the emergence, growth and development of libraries and other literary institutions in Leeds. It argues that this study of provincial society in a single locality has helped aid our understanding of the wider development of a middle-class culture in Georgian England. In doing so, it applies the findings of this study to wider historiography about Georgian provincial culture in book and library history, and also argues its significance for histories of science and medicine, as well as cultural and urban history.

Chapter 2

Improvement, Association and Print Culture in Georgian Leeds

On 1 November 1768 a subscription library, the Leeds Library, opened to the public at the 'Sign of the Dial' in Kirkgate, a street just off Briggate, the town's main thoroughfare. By some seemingly fortuitous circumstance, on that very same street just a few months earlier, the medical men of the Leeds General Infirmary had come together to form a sort of medical book club cum library where they purchased medical books and discussed medical subjects.

In spite of initial appearances, it was of course no coincidence that these two events occurred in Leeds in the year 1768, on the same street and within just a few months of each other. The forming of a medical library in the town by June 1768 (when its records begin) and the opening of a public subscription library in the town in November 1768 were both products of a series of wide cultural developments in Leeds and many other industrial towns in the second half of the eighteenth century. They were products of the culture of 'civic consciousness' and improvement which swept through Manchester, Sheffield and other 'regional service centres' in the north of England in the late eighteenth century.⁵¹

The primary purpose of this chapter then is to consider the landscape in which the two subscription libraries, one medical, one general, emerged in Leeds in 1768. In doing so, it outlines a brief history of Georgian Leeds and pays particular attention to a growing demand for books (and growing infrastructure for the distribution of print), for broadly based middle-class associational institutions, and for tokens of civic pride among Leeds's middle class in the years prior to 1768.

⁵¹ Hannah Barker, 'Smoke Cities', pp. 175-190.

The chapter begins with an introduction to the town of Leeds in the eighteenth century. A narrative of Leeds's economic, religious, political and commercial culture in the eighteenth century introduces the reader to some of the key figures in the township and evidences Leeds's importance as the commercial and cultural capital of the West Riding in the Georgian period. The chapter then progresses to consider the cultural infrastructure of the town and the middle-class movement to improve its civic image. The final part of the chapter examines print culture in Georgian Leeds. Here, it is proposed that books and literature were an important part of Leeds's cultural resources by the mid eighteenth century, and contributed to subscription library development in the town in 1768.

2.1 Georgian Leeds: Commerce and Culture

Leeds was a vibrant market and woollen town by the end of the seventeenth century, at the centre of trade and commerce in the West Riding. Visitors to the town frequently commented on this, as we see in Celia Fiennes' description of Leeds in 1698:

A Large town, severall Large streetes, Cleane and well pitch'd and good houses all built of stone. Some have good Gardens and Steps up to their houses and walls before them. This is Esteemed the Wealthyest town of its bigness in the Country its manufacture is ye woollen Cloth-the Yorkshire Cloth in wch they are all Employ'd and are Esteemed very Rich and very proud.⁵²

Daniel Defoe's depiction of Leeds as a 'large, wealthy and populous town, [situated] on the north bank of the River Aire', gives some further indication of Leeds's prosperity in the early 1700s, but it was the town's twice weekly merchant cloth market which was to receive Defoe's overwhelming praise – the market, was

⁵² *The Journeys of Celia Fiennes*, ed. by C. Morris (1947), 219-220.

a prodigy of its kind, and not to be equalled in the world [...]though no description can come up to the thing itself [...] ten or twenty thousand pounds value in cloth, and sometimes much more, [is] bought and sold in little more than an hour.⁵³

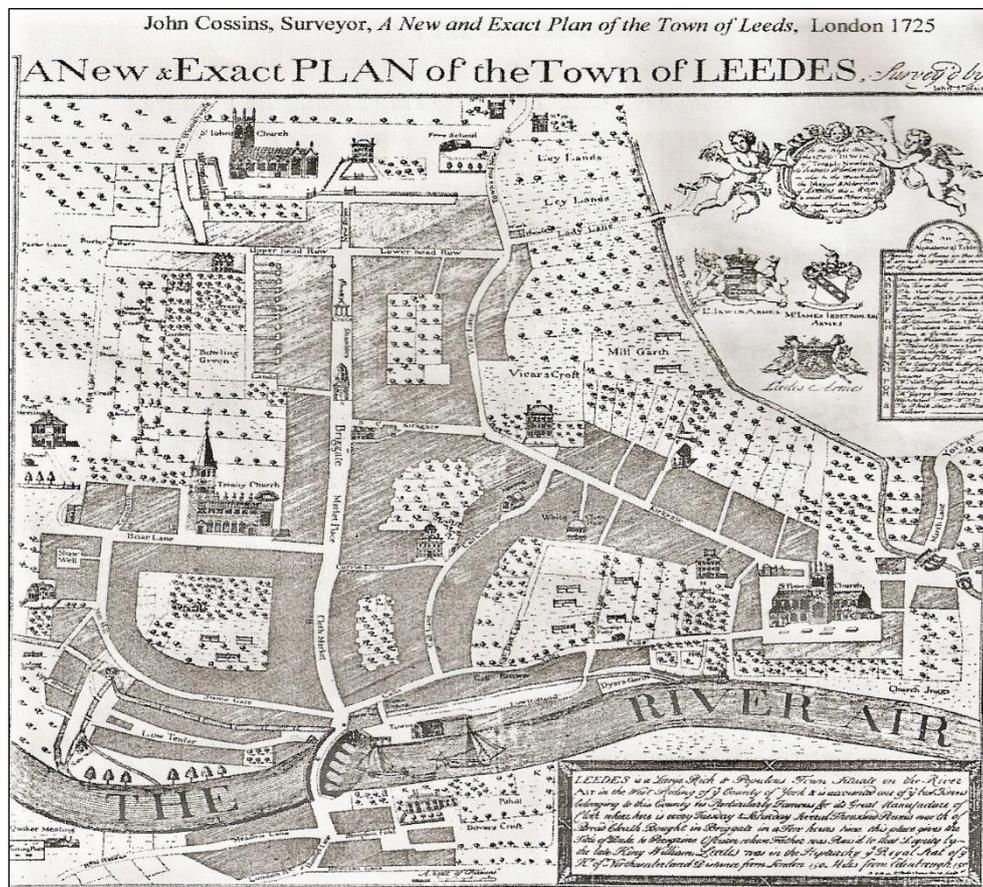
These early depictions of Leeds provide an insight into the workings of an eighteenth-century town that was dominated by the activities of its mercantile community. Yet whilst Leeds in the eighteenth century was certainly a commercial town, it was equally a town with a merchant-elite intent upon the pursuit of polite society and genteel culture – it featured various associational forums centred upon polite entertainment, taste and sociability such as its assembly rooms, coffee-houses and theatres. So too, was it home to a variety of different occupations and professions alongside its mercantile community, ranging from attorneys, bankers, clergymen and medical men by the mid-century to manufactures and trades such as pottery by its close.

Leeds revolved around its cloth trade. The majority of the town's inhabitants were engaged in the trade, and this was reflected in its physical landscape. Leeds centred upon the main thoroughfare of Briggate (where its twice weekly cloth markets were held) and Kirkgate and other streets to the east of Briggate, where many of its merchants lived (see figure 2.1).⁵⁴

⁵³ Daniel Defoe, *A tour thro' the whole island of Great Britain, divided into circuits or journies* (London: JM Dent and Co, 1927). Letter 8, Part 4: Leeds and North Yorkshire.

⁵⁴ The cloth market was originally held on the bridge crossing the River Aire (see figure 2.1) but had been removed to Briggate in 1684. G.C. Forster, 'The Foundations: from the earliest times to c.1700' in *A History of Modern Leeds* ed. by D. Fraser (Manchester: Manchester University Press, 1980), 2-21, (p. 17).

Figure 2.1: Cossin's Map of Leeds, 1725



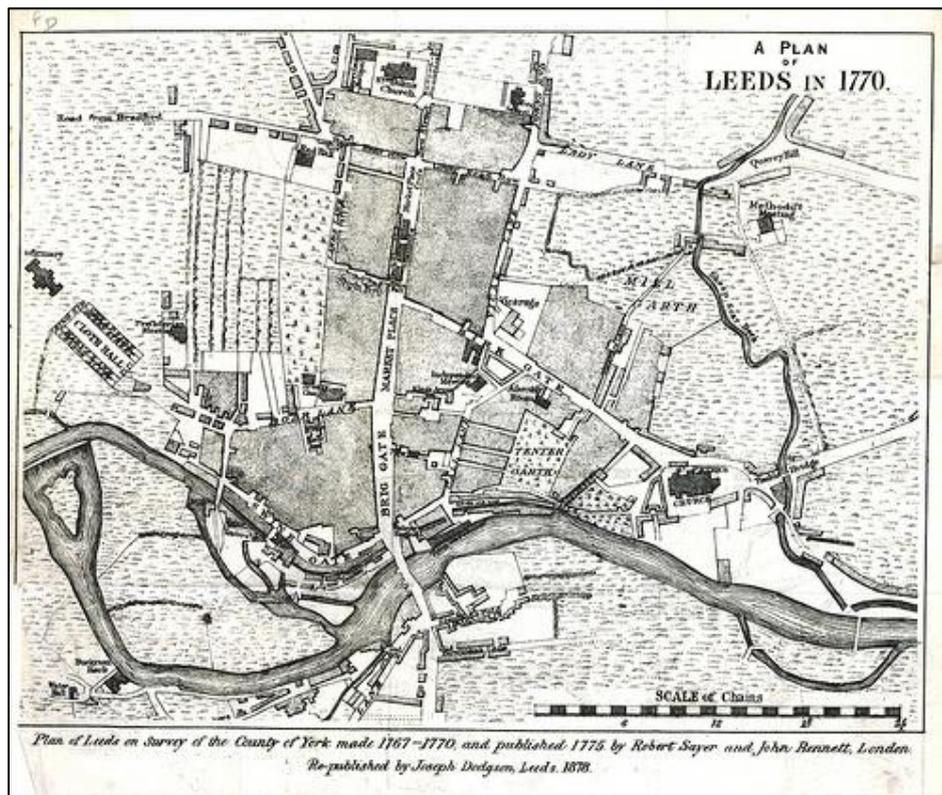
Source: By kind permission of Leeds Library and Information Services, www.leodis.net

This landscape (which had altered little since the seventeenth century), remained largely unchanged throughout the eighteenth century, even in the face of considerable population growth.⁵⁵ It was 1767 before the first new street for 150 years was built in the town, in spite of the population of the central township of Leeds having increased from 6000 in 1700 (with another 5000 or so persons in the outlying thirteen villages of its parish) to 17,121 in 1775.⁵⁶ Within twenty-six years this figure had nearly doubled to 30,669 and Leeds was England's sixth largest town.⁵⁷

⁵⁵ This is apparent if one compares Figure 2.1 depicting Leeds in 1725 with Figure 2.2 a map of Leeds from 1770.

⁵⁶ W.G. Rimmer, 'The Industrial Profile of Leeds 1740-1780', *Thoresby Society* (1967), 130-157, (p. 130); R.G. Wilson 'Georgian Leeds' in *A Modern History of Leeds* ed. by D. Fraser, (Manchester: Manchester University Press, 1980), pp. 24-43, (p. 24); Maurice Beresford, 'The Face of Leeds

Figure 2.2: Jeffreys' A Plan of Leeds, 1770



Source: By kind permission of Leeds Library and Information Services, www.leodis.net

The inhabitants of Leeds were governed by the town's Corporation, a merchant body, which since the early seventeenth century had been responsible for the control and regulation of the woollen industry in Leeds.⁵⁸ The Corporation consisted of twenty-four common-councilmen, twelve aldermen and a mayor. By the eighteenth century its involvement in the woollen industry was largely ceremonial, and its main responsibility lay in administration of the law and providing justice at the Quarter Sessions and frequent Petty Sessions.⁵⁹ For the first half of the century membership of this self-

1780-1914', in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 72-112 (p.74).

⁵⁷ C.J. Morgan, 'Demographic Change, 1771-1911', in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 48-71 (pp. 46-47).

⁵⁸ The corporation could trace its power and origin back to a Charter which had granted Leeds Corporation status in 1626.

⁵⁹ The Corporation's right to regulate the town's cloth industry, had been revoked in the 1725 Stamping Act. Wilson, 'Georgian Leeds', pp. 38-39.

selecting Anglican-Tory body lay among the mercantile community in spite of the active presence of various other religious denominations in the town including Arians (Call Lane), Quakers, Unitarians (Mill Hill Chapel) and later in the century, Methodists.⁶⁰ The mercantile community heavily regulated membership of the Corporation by carefully controlled measures such as a successful system of recruitment via apprenticeship, partnership, marriage and control of sociable institutions in the town.⁶¹ But from the 1740s onwards the Corporation began to reflect the changing social composition of the town as vacant positions increasingly came to be filled by lawyers, surgeons and other Anglican-Tory members of the town's professional community.⁶²

In the eighteenth century the economy of Leeds largely depended upon its cloth industry – in 1700 4/5ths of Leeds's population was engaged in the cloth trade.⁶³ Throughout the eighteenth-century Leeds merchants developed and maintained strong inter-regional connections with nearby towns in the West and East Ridings of Yorkshire including Wakefield, Selby and the port of Hull via a series of parliamentary Acts that connected their waterways. Situated on the North Sea, Hull in particular was of great importance to Leeds's mercantile fortunes in the Georgian period – Hull connected the north-east to the south, to London and to continental Europe. By the early eighteenth century the route was traversable by river following the passing of the Aire and Calder Navigation Act in 1699 (the original work making the River Aire navigable between Leeds and Knottingley was completed by 1704). This waterway enabled Leeds's mercantile community to engage in intercontinental trade and was vital to the transformation of their fortunes in the eighteenth century.⁶⁴ Its waterways provided a means of transportation at a time when Leeds was largely inaccessible by road. Prior to the 1750s

⁶⁰ On the Corporation see Wilson, 'Georgian Leeds'. On religion in Leeds: Nigel Yates, 'The Religious Life of Victorian Leeds' in *A History of Modern Leeds* ed. by D. Fraser, (Manchester: Manchester University Press, 1980) pp. 250-269.

⁶¹ Wilson, 'Georgian Leeds', p. 36; Joan Kirby, 'Restoration Leeds and the Aldermen of the Corporation, 1661-1700' *Northern History*, 22, (1986), 123-174, (136).

⁶² Wilson, 'Georgian Leeds', p. 36.

⁶³ Steven Burt and Kevin Grady, *The Illustrated History of Leeds* (Derby: Breedon Books, 1994), p.54.

⁶⁴ Unwin, 'Transport Centre', p. 120.

there was no direct route linking Leeds and London, with the capital a two week ride away along poor roads plagued by highwaymen.

Even after the introduction of turnpikes it took ten days for a broad-wheel wagon transporting goods to make the journey between Leeds and London.⁶⁵ It was 1760 before a regular coach service was established between Leeds and London and 1764 before the owners of the 'machines on steel springs' could claim a journey time of four days for their passenger carriages which left for London from 'Ye Olde King's Arms in Leeds every Monday and Wednesday'.⁶⁶ It was thus by means of its situation on the River Aire and the navigability of its waterways that Leeds's commercial development occurred in the eighteenth century.

Leeds's strong commercial and transportation connections with other regional towns helped the woollen industry in Leeds to grow substantially throughout the eighteenth century. The leading cloth merchant in 1737, William Milner was worth £25,000.⁶⁷ In the 1740s eighty per cent of the town's population was directly engaged in the trade.⁶⁸ By the mid-century at least two-thirds of the town's merchants received an income of between £200-600 per annum, with the other third on incomes well over £600.⁶⁹ Although there were periods of stagnation in the trade in the eighteenth century, particularly in the 1750s, the century on the whole marked an upward trend in output, with the years 1766-1773 and the 1780s being particular boom periods. Maurice Beresford has shown how the year 1768 was the 'best year' for new premiums with the Sun fire insurance agency in Leeds.⁷⁰

⁶⁵ R.W. Unwin, 'Leeds becomes a transport centre' in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 113-141, (p. 124)

⁶⁶ John Waddington-Feather, *Leeds The Heart of Yorkshire: a history and guide to the city and its surroundings* (Leeds, Basil Jackson Publications, 1967), p. 160.

⁶⁷ *Ibid.*, p. 63.

⁶⁸ Rimmer, 'Industrial Leeds', p. 138;153.

⁶⁹ *Ibid.*, p. 76.

⁷⁰ Beresford, *East End, West End: The Face of Leeds during Urbanisation, 1684-1842* (Leeds: Thoresby Society, 1988), p. 98.

By the late eighteenth-century Leeds was entering a period of prosperity.⁷¹ Its merchants were prospering consumers with ready money to spare. As we shall now see they chose to spend their wealth and engage their new-found leisure time in improving the cultural and civic image of Leeds.

2.2 Georgian Leeds: An Improving Town

In the eighteenth century, Leeds's rich merchant elite poured their capital into civic and cultural improvement as they attempted to create a town which would complement their new-found status at the heart of the English woollen trade. They sought to enhance Leeds and its cultural attractions through town improvement schemes and the creation of a number of broadly based middle-class associational institutions, centred upon sociability and polite entertainment.

Merchant investment in Leeds had been ongoing since the early eighteenth century. Investment took the form of commercial and economic investment to increase Leeds trading capacity. The town's two white cloth halls, which were built by the Corporation for the town's merchants in 1711 and 1756 fall under this category, as does the coloured cloth hall which was built in Leeds in 1756-7 at a cost £3500, and the widening of the Leeds bridge in 1758 to increase traffic into the town.⁷² In addition to this, Leeds's merchants spent their wealth on improving the outward appearance of the town.

In 1755 an Act for Improving Lighting and Paving in Leeds was passed. As well as improving lighting and the town's pavements, regulatory clauses in the act, which included £5 fines for anyone who failed on a Saturday to sweep their refuse in heaps for collection, and 10 shillings fine for anyone who dirtied a street by emptying on to it 'Soil,

⁷¹ Wilson 'Georgian Leeds', p. 30.

⁷² Percy Robinson, *Leeds Old and New: a picturesque sketch of the city from the earliest times to the present day* (Leeds: Jackson, 1926), p. 32.

Ashes, Rubbish, Dust, Dirt, Dung and Filth', were designed with respectability in mind.⁷³ The mid century saw the first major housing project in Leeds for nearly 150 years. In 1767 a number of new houses were built to the West of the town specifically for the habitation of the Leeds elite. Leeds's middle class sought to create a separate, civilised living quarter with the creation of new streets including Park Row and Park Square and the building of new houses in this area, away from the increasingly crowded areas of Kirkgate and the east of Leeds where they had traditionally been situated. That same year as part of the expenditure on civic improvement among Leeds's leading citizens, an Infirmary was instigated in the town. The Infirmary had a core staff of two physicians, four surgeons, an apothecary and a matron and, so that it could begin serving the town's population as soon as possible, was originally situated in rented premises on Kirkgate whilst its own premises were being built in the West End of the town.

Soon investment in Leeds began to shift away from civic ventures to cultural attractions upon which Leeds's merchant elite could bestow their patronage and their leisure time. Various classes offered instruction and entertainment for Leeds's elite; in 1727 afternoon experimental philosophy classes at the Moot Hall were advertised in the *Leeds Mercury*.⁷⁴ The town also featured coffee-houses such as the one belonging to Richard Taylor where billiards were played in the 1730s.⁷⁵ In addition to these, Leeds had a dancing academy which was opened in April 1750 by 'Mr. Joseph Baker, of London, in a large room in the Nag's Head Yard... where ladies and gentlemen may depend upon being instructed in the best manner'.⁷⁶ In the mid eighteenth century, Leeds's merchants expended their wealth on cultural improvement focused on the creation of a number of new institutions for sociability in the town. In 1762 a new concert room was built at the Rose and Crown public house. From this date a series of subscription concerts began to be held in the town, organised by the Parish Church

⁷³ Doncaster, Doncaster Archives, DD/WA/B1/15, Copy of the Leeds Improvement Act of 1755 owned by William Benson.

⁷⁴ Beresford, *East End, West End*, p. 55.

⁷⁵ David Thornton, *Leeds the Story of a City* (Ayr: Fort, 2002), p. 99.

⁷⁶ Robinson, *Leeds Old and New*, p. 50.

organist Mr Crompton. The new concert room was the venue for the first of these subscription concerts and featured performances of Handel and Bach at a cost of fifteen shillings for a joint ticket.⁷⁷ By 1768 such concerts were being held regularly in Leeds, often with the aim of raising money for the Infirmary. In the winter of that year the *Messiah* was performed eighteen times in the assembly room, and by this time the new concert room at the Rose and Crown had been joined by the New Concert Room on Vicar Lane (1767). By the end of the eighteenth century Leeds could also boast a theatre on Hunslet Lane (1771), a new purpose-built Assembly Room above the Third Leeds Cloth Hall (1776), and a Music Hall in Albion Street (1794).⁷⁸

In the eighteenth century a number of forums for sociability and polite discussion flourished in Leeds. The year 1768 saw the founding of the Leeds Library on Kirkgate, and the opening of a newsroom on Briggate belonging to a Mr Myers. Further newsrooms followed in 1806 when the 'Commercial Newsroom and Leeds Exchange' was established and in 1809 when the 'Union Newsroom' opened in one of the lower storey rooms in the new premises of the Leeds Library in Commercial Street. The opening of print-culture based institutions such as these in Leeds reflected a growing demand among Leeds's middling elite for meaningful forms of improvement, and for personal betterment. The remaining part of this chapter is devoted to exploring the links between the improvement culture among Leeds's elite and the emergence of print culture in Leeds in the eighteenth century.

⁷⁷ R.J. Morris, 'Middle-Class Culture 1700-1914', in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 200-222 (p. 202).

⁷⁸ Kevin Grady, 'Commercial, marketing and retailing amenities, 1700-1914' in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 177-199 (pp. 180-182).

2.3 Georgian Leeds: Print Culture

Books and print culture were an integral part of the culture of Leeds from the late seventeenth century.⁷⁹ In 1718 Leeds began producing its own newspaper, the *Leeds Mercury*, and a number of auctions of second-hand literature were held in the town. Auctions were the main means by which books were distributed in provincial England in this period and the key means by which Leeds's inhabitants could purchase literature at this point.⁸⁰ Over 150 auctions took place in Yorkshire between 1691 and 1781, the majority of which were held between 1740 and 1780.⁸¹ Such auctions often consisted of second hand literature as the following quote from an advertisement in the *Leeds Intelligencer* for an auction held in Leeds in November 1754 illustrates:

A collection of Modern books, amongst which are the works of Addison, Milton, Prior, Spencer, Plutarch, Pope, Swift, Shakespeare, Gay, Young, Chambers, Roscommon, Clarke, Vertot, Steele, Hervey, Beveridge, Sherlock, Buckingham, Prideaux, Locke and a great many more of the best English authors, all in good condition, most of them being neatly bound, gilt and lettr'd. With bibles and Common-Prayers, maps and prints.⁸²

These auctions were a central factor in increasing the availability and a key means of purchasing literature in Leeds in the years before the town was linked to the national network following the Turnpike Acts of 1755. However they tended to be conducted not by local booksellers but by 'itinerant' booksellers – booksellers from the provincial circuit who would travel to the area specifically to sell their stock.⁸³ Patrick Sanderson one such bookseller conducted at least three book auctions in Leeds and the

⁷⁹ John Penrose, a bookseller, binder and publisher was active in the town between 1681 and 1686. Elizabeth Parr, 'Early Leeds printers, publishers and booksellers: an example of the provincial book trade in the eighteenth century', (unpublished BA thesis, University of Leeds, 1973), p. 187.

⁸⁰ Raven, *Business of Books*, p. 130.

⁸¹ Elizabeth Swaim, 'The auction as a means of book distribution in eighteenth-century Yorkshire', *Publishing History*, 1, (1977), 49-91, (p. 50).

⁸² *LI* 5 November 1754, p. 4.

⁸³ Swaim, 'Auction', p. 54.

surrounding area in the 1760s and 1770s, which were advertised in the *Leeds Intelligencer*.⁸⁴ The fact that Sanderson kept returning to Leeds, combined with the fact that over half of the entire number of auctions held in Yorkshire between 1691 and 1780 took place in either Leeds or Halifax, shows that there was demand in Leeds for the books sold at these events.⁸⁵

That books and literature were increasingly sought after in Leeds in the eighteenth century is also evidenced by the growth of the local book trade in the town at this period. There was an active local printing sector in Leeds led chiefly by James Lister in the 1730s and 1740s and by Griffith Wright in the 1750s and 1760s, which printed a wide variety of literature, from newspapers and periodicals to books. One of the clearest signs of the growing demand and popularity of literature in Leeds in these years is the fact that a second newspaper, Griffith Wright's *Leeds Intelligencer*, began circulating in the town from 1754.

Leeds purchasers had been receptive to the periodical trade from the late 1730s when advertisements had begun to appear in the *Leeds Mercury* for the new periodicals emerging from London. In 1737, for instance, advertisements for two rival magazines, Edward Cave's *Gentleman's Magazine* and its rival *The Gentleman's Magazine, or Monthly Oracle*, featured in the *Leeds Mercury*.⁸⁶ Both of these periodicals were available to purchase from local booksellers including John Swale, Joseph Ogle, Samuel Howgate and Henry Penrose. The perceived popularity of these works in Leeds is no doubt responsible for James Lister's decision to advertise his intention of printing and publishing a journal in 1738 entitled *The North Country Magazine*.⁸⁷ Lister intended that the *Magazine* would 'contain material of a more literary nature than was within the

⁸⁴ *Leeds Intelligencer*: 12 November 1765; 2 February 1768 and 4 March 1777.

⁸⁵ The auctions were split equally between Leeds and Halifax with each holding a quarter of the total number of auctions in Yorkshire between 1691 and 1781. Swaim, 'Auction', p. 50.

⁸⁶ *Leeds Mercury*, 8 March 1737.

⁸⁷ *Ibid.*, 26 June 1738.

scope of the *Leeds Mercury*, but no copy has survived.⁸⁸ A similar attempt was undertaken by Griffith Wright in the 1750s. In February 1757, Wright announced his intention of printing a new monthly periodical entitled '*The Northern Light* (by Lucifer)'. As with Lister, it is likely that the emergence of a number of new periodicals on the national market, such as the *Monthly Review* (1749) and the *Critical Review* (1756), combined with the fact that the *Intelligencer* frequently featured advertisements for other periodicals such as the *Monthly Melody*, the *Royal Female Magazine*, the *Christian's Magazine*, the *Universal Review*, the *Spectator* and the *Tatler*, influenced Wright's decision to print the periodical.⁸⁹ However *the Northern Light* appears to have been another failure since there are no extant copies and no further references to it in the *Intelligencer*.⁹⁰

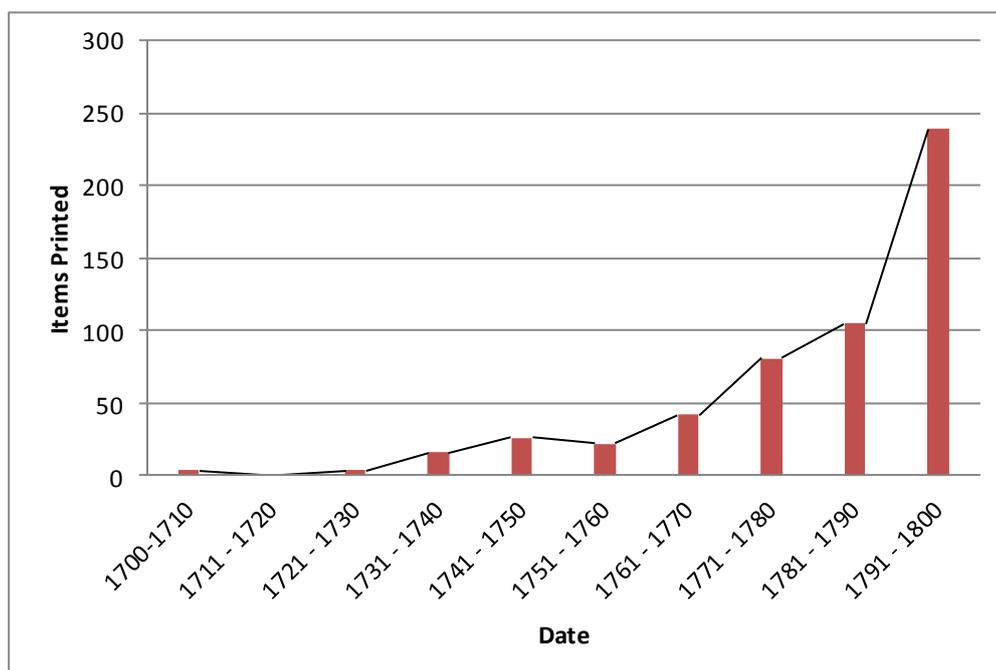
While there are no examples of successful periodicals in Leeds in the mid-century, this period did see the growth of local book production. Elizabeth Parr has traced approximately 179 books which were printed and sold in Leeds in the eighteenth century, which included reprints of well-known volumes and new works by local authors (see figure 2.3).

⁸⁸ Parr, 'Early Leeds Printers', p. 61.

⁸⁹ In the *Intelligencer* on 8 July 1760 for instance, George Copperthwaite advertised that he sold *The Spectator* and *The Tatler* alongside the *Universal Dictionary of Arts and Sciences* in eight volumes. *LI*, 8 July 1760, p. 4.

⁹⁰ Parr, 'Leeds Printers', p. 71; Leeds was not the only town where attempts had been made to establish a periodical in the years before a subscription library emerged. David Allan noted in his account of the development of the Perth Subscription library that a short-lived periodical had been published in the town by Robert Morison, postmaster and bookseller in the years immediately preceding its formation under the title *Perth Magazine of Knowledge and Pleasure* (the periodical was printed in 1772 and the library was founded in 1784). Allan, 'Provincial Readers and Book Culture in the Scottish Enlightenment: The Perth Library, 1784 – c. 1800', *The Library*, 3 (2002), 367-389, (2).

Figure 2.3: Number of items printed in Leeds, 1700-1800



Source: Elizabeth Parr, 'Early Leeds printers, publishers and booksellers: an example of the provincial book trade in the eighteenth century', (unpublished BA thesis, University of Leeds, 1973).

A limited number of books were published in Leeds between 1730 and 1770, the majority of which were religious titles, printed to meet local demand - nearly three-quarters of the titles printed in Leeds in the eighteenth century were of a religious nature.⁹¹ Until approximately 1760 the majority of the religious books printed and sold in Leeds were new editions of established religious works. For instance, between 1735 and 1745, the Leeds printer James Lister printed and sold the fifth and sixth editions of Benjamin Holme's *A serious call in Christian Love*, which had first been printed in 1722.⁹² However from 1760, it is apparent that a demand for newly printed literature among

⁹¹ The demand for locally printed material in Leeds reflects the primary demand for provincially printed material across the country in the eighteenth century – which was based on local demand. John Feather, *The Provincial Book Trade in Eighteenth-Century England* (Cambridge: Cambridge University Press, 1985), p. 110.

⁹² Benjamin Holme's (1683-1749) *A serious call in Christian Love*. Fifth edition 1737 (printed and sold by James Lister), sixth edition 1744 (printed by James Lister), *A serious call* was first published in 1722 when Holme was in the Netherlands, it was first published in Dutch, and then English where it was reprinted a total of twenty-four times. A.C. Bickley 'Benjamin Holme' in *ODNB* <www.oxforddnb.com> [accessed 13 April 2011].

Leeds's book-buying public shaped the development of Leeds's printing centre as the works printed after this date were predominantly new titles. For example, Griffith Wright printed a number of new religious works from 1760, such as *The Duty of a Parish Priest* (1760) and *The Substance of a Sermon* (1763), both by the Church of England Clergyman Henry Venn (1725-1797).⁹³ In 1763 he also printed local Moravian evangelist and preacher Benjamin Ingham's (1712-1772) latest offering, *A Discourse on the Faith and Hope of the Gospel*.⁹⁴ This shift towards the printing of new religious material in Leeds from around 1760 reflects a wider trend in the type of material printed and published across Britain in this period. In the second half of the eighteenth century new religious works outnumbered even the reprints of traditional popular sermons because of a growing demand from individual churches and religious societies.⁹⁵ On the whole however, Leeds's printing trade was limited to local demand.

While the local distribution networks and book trade were important to the development of a literary culture in Leeds, by far the most important contributing factor to the development of this culture in Leeds was the growing awareness in Leeds of new types of literature printed from London. James Raven has argued that 1740 marked the watershed in the dissemination of printed literature from London to the provinces. He asserts that Britain became a net exporter, rather than importer of books from this date due to soaring rates of publications of individual titles, which led to booksellers selling increasing amounts of literature outside of London.⁹⁶ John Feather attributes the growing availability in the provincial towns of books and other printed literature from

⁹³ Henry Venn, *The duty of a parish priest. A sermon*, (Leeds: printed by G. Wright, 1760); idem, *The substance of a sermon, preached on April 10th*. (Leeds: printed by Griffith Wright, 1763). Wright is also known to have printed *An Earnest and pressing call to keep the Lord's Day* (Leeds: 1760).

⁹⁴ Benjamin Ingham *A discourse on the faith and hope of the gospel*. (Leeds: printed by Griffith Wright, 1763).

⁹⁵ Raven, *Business of Books*, p. 242. Feather has also argued that the clergy were likely to be among the few sorts of people in eighteenth-century provincial society who could actually afford books, and so printers and booksellers purposely printed material to meet this demand as it would be a financially sound investment. Feather, *Provincial Book Trade*, p. 42.

⁹⁶ Raven, *Business of Books* pp.130-133.

the mid eighteenth century to an increase in the circulation of London newspapers in the provinces in the period following the turnpike trusts. He claims that these newspapers were the 'normal advertising medium for books' and that the book advertisements placed in these newspapers stimulated the supply of new literature to the provinces. Unfortunately, it has proved impossible to trace the extent to which London newspapers circulated in Leeds, so it is unclear to what extent the book advertisements they contained did influence the supply, demand and in turn purchase of books in Leeds in this period.⁹⁷

By 1768 six figures were active in the book trade in Leeds (dates shown are those dates active): Joseph Ogle (1732 – 1774), Joseph Wilson (1749 - 1775), George Copperthwaite (1756 - 1783), Griffith Wright (1754 - d.1812), John Binns (1765 - 1796) and James Bowling (1767 - d. 1813). Leeds's booksellers were an important link in the process of gaining new books and information about publications from London. According to a later account of his time as a bookseller in Leeds, John Binns's bookshop (est. 1765) was the 'recognised gathering-place of those who were inclined towards literature.' The account goes on to say that it was at his shop that 'the clergy met on Monday morning to discuss together perchance the sermons of the previous day, more probably the last pamphlet from London or the contents of the new number of *The Gentleman's Magazine*'.⁹⁸ The increasing emphasis this places on the role of the bookseller and their shop in the mid eighteenth century corresponds with the argument that books were very much part of the public culture of Leeds in this period.

One final example helps illustrate the growing popularity of print culture in Leeds in the eighteenth century. In the late seventeenth and early eighteenth-century

⁹⁷ Other provincial newspapers on sale in Leeds in the early eighteenth century included two Nottingham newspapers: John Swale is named on an imprint of the *Weekly Courant* in 1715, which he continued selling until c.1724, while another rival Nottingham newspaper was on sale in 1719 at the shop of John Penrose. Elizabeth Parr, 'Early Leeds Printers', p. 20 and p. 29.

⁹⁸ T. Wemyss Reid, *A memoir of John Deakin Heaton, M.D. of Leeds* (London: Longmans, Green and Co., 1883), p. 32. It should be noted that this is a partial source. J.D. Heaton was the son of an employee of Binns – John Heaton – who took over the running of the shop following Binns' death in 1796.

Leeds's book borrowing culture had primarily centred upon the grammar school library which was added to the Grammar School in 1691, and after two years contained more than four hundred volumes the majority of which were folios. Its purpose was that of a 'public' library, 'intended for use by the Master and citizens of Leeds rather than by the scholars'. by the mid eighteenth century and the same years as the increase in Leeds's trade took place, a culture of book borrowing in the town began to emerge centred upon a culture of joint expenditure. In this era small groups of individuals joined together to purchase literature in Leeds, one example of this being the 'Leeds Clergymen's Society'.⁹⁹ Even more importantly, this period was marked by the formation in the town of commercial circulating libraries, run by booksellers.

On 1 January 1759 Joseph Wilson, a local bookseller, opened a circulating library in the town. Wilson's intention was to charge the 'Lady and Gentlemen' members of his library one half guinea per year for the privilege of subscribing to the venture and for borrowing literature. Wilson's enterprise was most likely a failure – by the end of 1759 Wilson was advertising the sale of a catalogue of 1900 books – but a second circulating library operated by John Binns in 1765 was rather more successful and lasted until 1795. Institutions such as these opened in Leeds in consequence of an increased demand among its educated middle class for new forms of literature. A demand that was stimulated by the increased availability in Leeds of newly printed literature from London in the mid-century, combined with the larger disposable incomes of Leeds's merchants.

⁹⁹ The 'Leeds Clergymen's society' (members unknown) purchased books as part of its practice. The society appears to have been active in the town by 1760 and it subscribed to and purchased at least four books – William Adey *Sixteen Discourses* (Newcastle 1760), Francis Fawkes (ed.), *Idylliums of Theocritus* (London 1767), John Gutch, *Collectanea curiosa* (Oxford 1781), and John Newson, *Brief explication of the Christian religion* (Sheffield 1790).
<http://web.archive.org/web/20071214010826/http://www.r-alston.co.uk/contents.htm>.

2.4 Conclusion

By 1768 Leeds was a town with a wealthy middle class who, having made their money in trade, had begun to invest in the town. Such investment took the form of investment in trade, in the public and civic appearance of Leeds, in polite entertainment and in the printed culture that was increasingly available on its streets and amongst its booksellers. It is the burgeoning print culture of eighteenth-century Leeds which informs the rest of our discussion as we turn to look for the remainder of this thesis at how different groups of individuals from within the township sought to create libraries and have access to literature which reflected their polite interests and work-related needs.

PART II

LIBRARIES

Chapter 3

The Founding of the Leeds Libraries: Medics, Merchants and Ministers

A middling sort of elite, civic improvement, polite culture and sociable institutions were just some of the prerequisites for subscription library development in the north of England in the eighteenth century. In Leeds, as outlined in chapter two of this thesis, this framework was in place in the town by 1768, the year in which two subscription libraries were founded in the town. In that year, a medical library and the Leeds Circulating Library (to give it its proper title) were formed in the town. By the end of the eighteenth-century Leeds could boast a total of four subscription libraries, including a library solely for foreign literature. Together, these four libraries provided the townspeople with a selection of books far beyond their individual capabilities.

This chapter discusses the libraries themselves – the Medical Library, the Leeds Library, the Foreign Library and the New Subscription Library. It will ask why each library was formed, examine the early collections of each, and outline precisely how each subscription library functioned when first established. In order to do so the chapter will examine, in chronological order, the emergence of each subscription Library in Leeds and assess each library's standing after the first year of its establishment.

We first examine the formation of the medical library in Leeds. I provide a brief narrative of the state of the medical profession in the mid eighteenth century and discuss the formation of an Infirmary in the town in 1767. I discuss the membership of the medical library, and suggest that the formation of a library for professional purposes among the town's medical practitioners causes us to re-think the motivations for the establishment of other subscription libraries in Georgian Leeds. I then turn to discuss the establishment of the Leeds Library in the town. I begin with a study of the reading habits of Joseph Priestley and argue that Priestley was a prime motivator in the formation of the Leeds Library. I then provide a narrative account of the library's operations in the year 1768 and discuss its membership and early collections. Our focus

then shifts to the year 1778, the year that a Foreign Library was established in Leeds. I argue that the Foreign Library was formed for professional purposes. I show that the library's founding subscribers were predominantly merchants engaged in the textile trade who needed a working knowledge of the continental languages. Finally I turn to examine the reasons for the formation of the New Subscription Library in Leeds. I show that the library was formed in response to grievances at the Leeds Library and examine rumours about the library's connections with radicalism in late Georgian Leeds.

3.1 The Medical Library at Leeds

In the mid eighteenth century the town of Leeds contained a large number of persons engaged in the profession of medicine. A plentiful supply of apothecaries, surgeons and physicians served the town's merchant elite and vied for their patronage. By 1760, the faculty of medicine in Leeds featured two physicians, James Milner (1706-1788) and William Hird (1728-1782), and a number of surgeon-apothecaries including William Dawson, Frances Billam (1723-?), James Barwick (1742-1800), Benjamin Glover and William Hey (1736-1819). In addition to these men, the town also contained a number of well-established family firms of apothecaries such as those of John, Henry and Charles Atkinson, Michael and Lawrence Cottam, William, Richard and Robert Faber; Edward, Edward Junior and James Kenion.¹⁰⁰

By 1767 demand in the town for medical provision was such that the establishment of an Infirmary was found necessary.¹⁰¹ On 20 May 1767 as part of the expenditure on civic improvement in the town that we saw in chapter two, eighteen persons, among them leading citizens in Leeds society, and members of its medical

¹⁰⁰ P.J. Wallis, and R.V. Wallis, *Eighteenth century medics: subscriptions, licences, apprenticeships*, 2nd edn (Newcastle: Project for Historical Bibliography, 1988); Josephine Lloyd, 'The Casebooks of William Hey F.R.S. (1736-1819): An Analysis of a Provincial Surgical and Midwifery Practice' (University of Leeds: unpublished PhD thesis), p.82.

¹⁰¹ For the history of the development of infirmaries, see John Woodward, *To do the sick no harm: a study of the British voluntary hospital system to 1875* (London ; Boston : Routledge and Kegan Paul, 1974).

faculty came together to take the necessary steps to form an infirmary.¹⁰² The meeting was led by James Kenion, who was then Mayor of the town, and was also attended by the physicians James Milner and William Hird and the surgeon William Hey who played a prominent role in its formation. It was Hey who contacted Reverend Clayton, one of the trustees at the Manchester Infirmary, to answer the queries of the board of trustees of the General Infirmary at Leeds.¹⁰³ He was also a leading figure in the move to establish permanent premises for the Infirmary. By 10 June 1767 the scheme had secured subscriptions to the value of £1352.10s.6d, and premises were sought to house the Infirmary. The Infirmary opened later that year in temporary rented premises on Kirkgate, off Briggate, with a core staff of two physicians, four surgeons (from the nine who had originally applied for the position), an apothecary and a matron, and in 1771 it moved to new purpose-built premises.

In 1768, one year after the General Infirmary was established, a society dedicated to purchasing works on the subject of medicine was operating in Leeds. This society developed into a provincial medical library, the first one of its kind outside the eighteenth-century medical centres of London and Edinburgh.¹⁰⁴ How this society, otherwise known as the Leeds Medical Library came into being, who it involved and the reasons for its formation are the subject of our enquiry throughout the remainder of this section.

The Leeds Medical Library, which started out as a collection attached to a medical society, was in existence by June 1768. It is unclear precisely what sequence of

¹⁰² On the early history of the infirmary, see S.T. Anning, *The General Infirmary at Leeds, Volume 1: The First Hundred years 1767-1869* (London: E. & S. Livingstone, 1963).

¹⁰³ 'Mr. Hey produced a Letter from The Revd Mr. Clayton One of the Trustees of the Manchester Infirmary in answer to some Queries Which Mr. Hey proposed to him'. Leeds, West Yorkshire Archives, WYL 2295/1 Quarterly Board meetings, minutes, 1767-1818, pp. 3-4.

¹⁰⁴ Edinburgh Medical Society formed in 1732, with Alexander Monro primus (1697-1767) as its secretary of this medical group. Student medical society formed in 1734; known as the Medical Society of Edinburgh (from 1737). In London, the Society of Naval Surgeons formed in 1746; Society of Hospital Physicians formed in 1752. The Society of Licentiate Physicians formed in 1764.

events surrounded the formation of this Medical Library, but we can conjecture from the nature of the fragmentary source material surrounding its foundation that its instigation in Leeds lay around the time of the formalisation of medical provision in the town with the opening of the General Infirmary at Leeds in June 1767. Direct evidence of a link between the founding of the Infirmary and the founding of a Medical Library in Leeds can be found in an account of the Leeds Medical Library that featured in Samuel Foart Simmon's *Medical Register* (1779), the first attempt to describe the state of the medical profession in Britain:

We ought not to close this short account of the Infirmary, without mentioning the MEDICAL LIBRARY belonging to it; an institution which cannot fail to be of great utility, by extending Medical knowledge, and which we wish to see imitated in every large country town in the kingdom. The history of it [...] is as follows, "A few years ago the Faculty here entered into a subscription of half a guinea per Annum, towards a Medical Library, which was made the property of the Infirmary. A meeting is held every three months, when a committee is appointed for the purchasing of books. [...] Almost the whole of the Faculty at Leeds are subscribers, together with several persons who are not of the profession"¹⁰⁵

While its origins may be obscure, and its early collections likewise (they are not explored until chapter four), we do know who formed the early membership of the Medical Library. In the early nineteenth-century, John Pearson, a surgeon who had trained at Leeds under the guidance of the surgeon William Hey (F.R.S), was able to access the early records of the society dating between June 1768 and 1769. The original subscribers were all medical men. There were seven subscribers in total, three physicians – James Milner, William Hird and James Crowther – and four surgeons – Francis Billam, William Hey, Thomas Jones and James Lucas.¹⁰⁶ The library's membership, as we shall see, derived from the learned community of medical men who began working together in close proximity as the 'Faculty' at the Infirmary.

¹⁰⁵ Samuel Foart Simmons, *The Medical Register for the Year 1779* (London: printed for J. Murray, 1779), p. 146.

¹⁰⁶ Pearson, *Hey*, pp. 37-38.

Membership of the Medical Library was almost identical with those appointed to the General Infirmary at Leeds when it opened in 1767. William Hird and James Crowther had filled the positions of physician; Francis Billam, William Hey, Thomas Jones and James Lucas that of surgeon.¹⁰⁷ The only member of the Medical Library not to hold an honorary position at the infirmary was James Milner. Yet he too, as we saw earlier in this chapter, had been heavily involved in its instigation. The close connections with the infirmary this account demonstrates cast light on the motivations which were at play in the decision to found a medical library in Leeds.

The medical library filled a void which existed in Leeds at that time: a lack of formalised provision for books or resources suited to the needs of a professional body such as medical men. John Thornton has noted that specialised book-lending organisations, like those associated with the medical profession, often originated in the provinces due to poor library provision.¹⁰⁸ This analysis certainly bears out upon examination in Leeds. In chapter two I identified that the only public book provision in Leeds at this time was in the form of the library of the local grammar school and John Binns' circulating library, of which very little is known. The medical library not only predated the Leeds Library, but was the first specialised provincial library of its type.

In addition, personal and collective improvement may have motivated the formation of the Medical Library. Michael Brown, for instance, has asserted that away from the metropolitan centres 'of corporate power and education', improvement was an important aspect of the coming together of physicians and surgeons in medical societies such as the York Medical Society (1832).¹⁰⁹ In Leeds when the Infirmary opened in 1767 its faculty represented the coming together of medical knowledge in the town, in one place, for the first time. They were a group of men determined to improve

¹⁰⁷ These gentleman were appointed at a meeting on 29 July 1767. WYL2295/1 Board Meetings, pp. 11-13.

¹⁰⁸ J. Thornton, *Medical Books, Libraries and Collectors: A Study of Bibliography and the Book Trade in Relation to the Medical Sciences* (London: Deutsch, 1966), p. 202.

¹⁰⁹ Michael Brown, *Performing Medicine*, p. 153.

medical care in the town. Together they brought a new quality to medical practice in the town. They were among the first of a new breed of practitioner to emerge in Leeds, highly educated and with formal medical experience to supplement the traditional qualification of a seven-year apprenticeship. Coming together to form a society dedicated to the purchasing of books, and discussion of medical subjects provided an opportunity for Leeds's medical men to pool one another's experience, and improve their medical knowledge.

The origins of a Medical Library formed at Liverpool in 1779 provide an equivalent example with which to compare the emergence of the Medical Library in Leeds in the eighteenth century. That library (now the Liverpool Medical Institution) can likewise trace its formation to elite medical practitioners and the generation of young, well-educated medical men who joined the faculty of Liverpool Infirmary in the mid-late eighteenth century. Unlike Leeds the Infirmary at Liverpool had been established for upwards of twenty years by the time the medical library was formed, but it was the coming together of three young surgeons in Liverpool, Henry Park, John Lyons and Edward Alanson that initiated its emergence in that town. These three surgeons were newly appointed to the faculty at Liverpool Infirmary between 1768 and 1770 and immediately formed a 'surgeon's book club' to purchase the latest medical works. Although it appears no books were purchased until 1778, the book club, or 'medical library' as it quickly became known was joined by the Physicians at the Infirmary, including the recently appointed Matthew Dobson (1735-1784) who was the first Liverpool physician to be elected an F.R.S. (in 1778) and became the first president of the Liverpool Medical Library (f.1779). It was also joined by the staff at the Liverpool Dispensary (founded in 1778) which seems to have prompted the group to begin purchasing books for the 'library scheme'. By 1779 this scheme had attracted attention from other medical men in the town not associated with either the infirmary or the dispensary, at which time it was eventually agreed to form a medical library on a

subscription basis for the medical men of the town.¹¹⁰ The example of Liverpool, combined with that of Leeds, serves to demonstrate the importance of education and the infirmary faculty in the formation of medical libraries. A new breed of educated medical practitioners forming ‘faculties’ of medicine in provincial English towns in the mid eighteenth century were pushing forward the very frontiers of knowledge in their own discipline. Of course this was not isolated to Leeds or Liverpool. The medical men of Hull established a medical library in 1770, while the relevance of the ongoing professional development needs of the eighteenth-century medical practitioners to provincial library development has not gone unnoticed.¹¹¹ Paul Sturges has suggested that one of the prime reasons medical men in 1783 joined the Derby Philosophical Society – whose library was largely based upon medical subjects – was for professional reasons: ‘First that the company of colleagues and access to the medical works in the library could enable them to keep their purely medical knowledge fresh; second that the occasional relation of advances in medicine to chemical and other scientific knowledge made it seem useful for conscientious practitioners to have at least an acquaintance with these subjects.’¹¹² It seems reasonable to conclude that the knowledge and in-depth experience of Leeds’s new breed of practitioners had gained through their formal medical training had imparted to them the importance of keeping their medical knowledge ‘fresh’ in an ever-changing discipline.

This brief account of the Medical Library has illuminated the development of a professional subscription library for medical men in Leeds. Yet it causes us to rethink the motivations for the establishment of the other subscription libraries in Leeds which followed in the Medical Library’s wake. Was the Leeds Library which was also founded

¹¹⁰ See Ann Florence and Mair Pierce Moulton, ‘The formation of the Liverpool Medical Institution: Dispersal of Medical Knowledge and the Development of the Library’, *Medical Historian*, 14 (2002-2003), 34-45, (pp. 34-35). For further information on the Institution, see Thomas H. Bickerton, *History of the Liverpool Medical Institution in special relation to the question of the lease*, (1904), pp. 3-4.

¹¹¹ See *A Catalogue of the books belonging to the medical library at the General Infirmary at Hull* (Hull : J. & W. Rawson, 1790); Bickerton, *Liverpool Medical Institution*, pp. 3-4.

¹¹² Sturges, ‘Derby Philosophical Society’, p. 18.

in 1768 equally motivated by the demands of professional groups of subscribers such as medical men? We will assess this question in the next section, as we now turn to examine the foundation of some of Leeds's other eighteenth-century libraries, including the origins of the Leeds Library.

3.2 Leeds Circulating Library

Today the Leeds Library is the oldest surviving subscription library of its type in England. It has a prestigious place in British library history and is by far the most renowned and studied of Leeds's libraries thanks partly to its longevity (it is just three years away from celebrating its 250th anniversary), combined with its early associations with Joseph Priestley, Unitarian minister, theologian and natural philosopher.¹¹³ Although the Leeds Library no longer bears the credit of being Leeds's first subscription library (a status which has wrongly been reinforced in various histories of Leeds, libraries and indeed the eighteenth century more generally), its origins can now be scrutinised in light of the finding that the Medical Library preceded its establishment in Leeds. This section seeks to re-examine the Leeds Library's foundation, provide an overview of the Library's early history, and assess how the library came into being. It considers whether the premise that the Leeds Library and its associated histories has maintained for the last two centuries – that its foundation was marked by the arrival of Joseph Priestley in the town and a merchant elite determined upon regional emulation – holds up to closer inspection. In turn, the difficulties faced by those determined to establish a general subscription library in Leeds, from decisions over where the library ought to be situated, to what rules and regulations should inform its governance are discussed here as the library's first few months of formation and operation are outlined to the reader.

¹¹³ Publications on the library include Frank Beckwith *The Leeds Library* (1968), and, 'A Very Good Public Library': *Early Years of the Leeds Library*, ed. by Geoffrey Forster (Wylam: Allenholme Press, 2001).

A. The role of books in Joseph Priestley's Life, Activities and Career

One of the main instigators in the establishment of the Leeds Library in 1768 was Joseph Priestley (1733-1804), the recently appointed minister at the Unitarian Mill Hill Chapel in Leeds.¹¹⁴ The library was established just one year after Priestley's arrival in the town and he was heavily involved in its organisation, acting first as its Secretary (1768-1769) and then as its President (1769-1770). Many articles, books and biographies attest to Priestley's involvement in the literary and scientific circles of eighteenth-century Britain, although the period up until 1773 – when Priestley left Leeds to take up the position of Librarian to the Earl of Sherburne – is less well studied.¹¹⁵ Yet books and other literary material played in an important role in Joseph Priestley's life, activities and career prior to his arrival at Leeds in 1767. In this section which discusses Priestley's early interest in books and reading, his personal interest in helping to establish the Leeds Library, which has not previously been examined by historians, becomes clear. As we shall see, it was a matter of personal convenience and practicality for Priestley to have access to a large repository of printed material in Leeds relevant to his varied interests in natural philosophy, education and grammar, and theology (among other subjects).

Born into a cloth making family at Fieldhead, Birstall near Leeds on 13 March 1733, Joseph Priestley's early years were largely spent away from home living with

¹¹⁴ Thomas Dunham Whitaker, *Loidis and Elmete: or an attempt to illustrate the districts described in those words by Bede; and supposed to embrace the lower portions of Airedale [sic] and Wharfedale, together with the entire vale of Calder, in the county of York* (Leeds: Privately printed, 1816), p. 86.

¹¹⁵ See for instance R.G.W. Anderson and Christopher Lawrence (eds) *Science, Medicine and Dissent: Joseph Priestley (1733-1804)* (London: Wellcome Trust, 1987); Norman Beale *Joseph Priestley in Calne* (East Knoyle: Hobnob Press, 2008); Malcolm Dick (eds) *Joseph Priestley and Birmingham* (Birmingham: Brewin Books, 2005); Isabel Rivers and David L. Wykes (eds) *Joseph Priestley, Scientist, Philosopher, and Theologian* (Oxford: Oxford University Press, 2008); Robert E. Schofield, *The Enlightenment of Joseph Priestley: A Study of his Life and Work from 1733 to 1773* (University Park, Pa: Pennsylvania State University Press, 1997); Robert E. Schofield, *The Enlightened Joseph Priestley: a study of his life and work from 1773 to 1804* (University Park, Pa: Pennsylvania State University Press, c. 2004) and Ruth Watts, 'Joseph Priestley (1733-1804)' *Prospects: The Quarterly Review of Comparative Education*, XXIV:3, (1995), 343-353.

various members of his extended family.¹¹⁶ By the age of four Priestley could repeat all 107 questions and answers of the Shorter Westminster Catechism “without missing a word” but his interest in reading stemmed from the influence of his father’s Calvinist sister Sarah and her husband John Keighley with whom he went to live at Heckmondwike, about three miles from Fieldhead, at the age of eight. Here Priestley attended the local Independent Chapel and began reading religious texts including (Priestley later recorded) “most of Mr. Bunyan’s works and other authors of religion”. His aunt, noticing his natural ability and interest in books insisted that Priestley have a good education. At the age of twelve or thirteen – with the intent that he would enter the ministry – Priestley attended a large free school in the neighbourhood (most likely the Grammar School at Batley founded in 1612) where he learnt Latin and Greek. During the holidays he learnt Hebrew from his minister John Kirkby, and from 1746 until 1749 he attended Kirkby’s own school.

At the age of sixteen suffering from consumption and ill-health it was decided that the ministry was unsuited to Priestley’s constitution and that he was instead to enter trade. A position was found for Priestley at a counting house in Lisbon, and in preparation for this endeavour the young scholar taught himself French, High Dutch (German) and Italian. Fortunately Priestley recovered from his illness and was able to continue his studies in order that he might enter the ministry. At this stage he studied mathematics with George Haggerston (d.1792) a Presbyterian minister at Hopton, and by this means was introduced to new reading material. Algebra and geometry were learnt from a 1678 edition of Issac Barrow’s *Euclid*, whilst natural philosophy, logic and metaphysics were mastered from W.J. Gravesende’s *Mathematical Elements of Natural*

¹¹⁶ Aged one Priestley was sent to live with his maternal grandfather, a farmer and maltster of Shafton, near Wakefield, until the death of his mother in 1739, whereupon he returned home to Fieldhead to live with his father for just two years. This and subsequent biographical information taken from Robert E. Schofield, *The Enlightenment of Joseph Priestley: A Study of his Life and Work from 1733 to 1773* (University Park, Pa: Pennsylvania State University Press, 1997) and David L. Wykes ‘Joseph Priestley, Minister and Teacher’ in *Joseph Priestley, Scientist, Philosopher, and Theologian*, ed. by Isabel Rivers and David L. Wykes (Oxford: Oxford University Press, 2008), 20-48.

Philosophy (pub 1720 in Latin, Eng. Translation 1721), John Locke's *Essay concerning Human Understanding* (pub. 1690) and Isaac Watt's *Logic* (pub. 1725).¹¹⁷ Priestley was thus well-learned by the autumn of 1752 when he entered Daventry Academy.¹¹⁸

By 1752 Daventry Academy was under the guidance of Caleb Ashworth (1722-1775).¹¹⁹ The Academy's pedagogy placed particular emphasis on printed matter and discussion and it was an environment in which Priestley excelled. Teaching was based around the books in its library, whose purchase was funded out of the £23 admission fee (as was the maintenance of scientific apparatus, along with tuition, room and board). The library's holdings must have been wide-ranging, since they enabled Priestley to read works not only in divinity (Howe's *Blessedness of the Righteous* and 'controversial' works including Sherlock's *Discourse*) but also in natural philosophy (Newton's *Optics* and Barrow's *Universal Dictionary*), medicine (Cheselden's *Anatomy of the Human Body* and Boerhaave's *Chemical Lectures*) and literature (Tacitus's *History*, and the *Life of Agricola*, alongside Dryden's *Fables*, *Peruvian Tales* and *Voyage round the World*).¹²⁰

Books and reading continued to be important for Priestley beyond his formal years of education. As assistant minister at the dissenting chapel in Needham Market, Suffolk, (a position he secured in 1755 with Caleb Ashworth's help) Priestley continued to read widely, making use of his local friends' private collections to supply his literary interests.¹²¹ In turn, Priestley himself began teaching others, instilling in his pupils the importance of books and reading. Priestley began this mission with the children of his congregation at Needham, whom he taught Isaac Watt's *Catechism*, and continued it at

¹¹⁷ For the significance of these works in Priestley's subsequent publications, see Schofield, *The Enlightenment of Joseph Priestley* pp. 14-28.

¹¹⁸ At Daventry, Priestley 'was excused all the studies of the first years, and a great part of those of the second.' *Memoirs*, p. 9.

¹¹⁹ "Daventry" Academy had originally been established as a dissenting academy at Market Harborough in 1729 with Philip Doddridge as its first Principal, before moving to Northampton upon Doddridge's death in 1751, and eventually to Daventry, Northampton.

¹²⁰ Tony Rail and Beryl Thomas, 'Joseph Priestley's Journal while at Daventry Academy, 1754', *Enlightenment and Dissent*, 13 (1994), 49-113.

¹²¹ *Memoirs*, pp. 18-38.

Nantwich, where he resided from September 1758. There, he led the town's Nonconformist congregation and formed a school for children of the town's dissenting families. The school's pedagogic emphasis was on Latin, English grammar, and natural philosophy and Priestley purchased philosophical instruments such as an air pump and electrical machine with which to elaborate in these classes. He also formed a small library for the children which included books on natural and civil history, and accounts of travels, and wrote a book on English Grammar for the use of his pupils which was later published as *The Rudiments of English Grammar* (1761).¹²²

Priestley was further able to indulge his literary interests, and his growing penchant for penmanship whilst tutor of languages and *belles lettres* at Warrington Academy (1761-1767). Whilst at Warrington Priestley came to be recognised as an author, and in addition to the *Grammar* six other works by Priestley were published during his spell in the town on topics ranging from biography to natural philosophy, politics and theology. The *Grammar* however was not perfected and Priestley spent much of his time at Warrington working on a new edition of the work. When the second edition appeared in 1768 (by which time Priestley had moved to Leeds) under the new title *The English Grammar, with Notes and Observations, for the Use of those who have made some Proficiency in the Language*, it was nearly double its original length and contained a number of revisions. Most notably it now contained 'collected examples from *modern writings* rather than those of Swift, Addison and others who wrote about half a century ago...' – examples which were intended to help the reader comprehend the rules of grammar.¹²³ Priestley extracted examples for this purpose from the likes of Walpole, Blackstone, Condamine, Hume, Mrs Macaulay, Lady Montague and Tillotson (among others), authors whose works he freely admitted eighteenth-century readers

¹²² Joseph Priestley, *The Rudiments of English Grammar, to which are added, Observations on Style and Specimens of English Composition, adapted to the use of Schools* (London: printed for R. Griffiths, 1761).

¹²³ Joseph Priestley, *The English Grammar, with Notes and Observations, for the Use of those who have made some Proficiency in the Language* (London: J. Johnson, 1768), p. xi.

would typically associate with 'amusement', rather than the improving purpose he had in mind.

Importantly, when writing these publications, Priestley was able to benefit from access to two libraries. The first of these, the Academy's library (which dated from the Academy's establishment in 1757) was formed from the tutor's own books, books bought by the Trustees, and the private library of its librarian (and the Academy's founder) John Seddon.¹²⁴ Its collections included Sermons, works on Theology and Scripture, Grammars, Greek and Roman Classics, History, Chronology, Geography, Voyages, Travels, Politics, Commerce and Law, and Mathematics and Natural Philosophy.¹²⁵ Many of the books Priestley referred to (particularly in the revised *Grammar*) featured in its collections which meant Priestley himself avoided the heavy costs associated with covering book purchases. Those not in the Academy Library, Priestley could find in the town's local subscription library – the Warrington Circulating Library (est. 1760), of which he was a member.¹²⁶ Priestley was actively involved in the governance of this library whilst at Warrington and spent a diligent five years on the board of governors during which time he attended nearly every monthly board meeting, helped established its rules and regulations and was involved in book selections for its collection.¹²⁷

Joseph Priestley was thus versed in a tradition of print and library culture when he arrived in Leeds in March 1767 to take up the position of minister to Mill Hill Chapel. By this time, as we have seen, Priestley's professional interests had necessitated his

¹²⁴ It also included libraries formerly belonging to Samuel Stubbs and Benjamin Grosvener. Simon Mills, 'Warrington Academy (1757-1786)', Dissenting Academies Online: Database and Encyclopedia, Dr Williams's Centre for Dissenting Studies, August 2011.

¹²⁵ *A Select Catalogue of Books in the Library belonging to the Warrington Academy* (Warrington, 1775); Irene Parker, *Dissenting Academies in England Their Rise and Progress and Their Place, Among the Educational Systems, of the Country* (1914; repr. London: Forgotten Books, 2013), pp. 154-5.

¹²⁶ The Warrington Library was instigated in 1760 by John Seddon, one of the founders of Warrington Academy. Patrick O'Brien, *Warrington Academy 1757-1786: Its Predecessors & Successors*, (Lancashire: Owl Books, 1989), p. 16.

¹²⁷ Schofield, *Enlightenment* p. 90.

reliance on libraries, books and reading. However upon arrival in Leeds, as we saw in chapter two, Joseph Priestley was faced with a town whose library provision was predominantly limited to a small selection of books in the local grammar school and those circulated by the bookseller John Binns. Given that Priestley's professional interests only increased once he arrived in Leeds – his ministerial position gave a renewed interest for matters of theology and he published over twenty treatises on theology and religion in the six years he spent at Leeds, as well as four treatises on natural philosophy – such library provision was inadequate. Understandably, desirous of having improved access to libraries and books whilst in Leeds, and with the experience of managing the Warrington Library behind him, Priestley set about forming a subscription library – the Leeds Library. It was a library which would meet his own professional needs, whilst improving access to printed material for others in the town. Now all Priestley had to do was persuade others to join him.

B. The Forming of the Leeds Library

On 9 August 1768 an advertisement suggesting the formation of a circulating library in Leeds appeared in the *Leeds Intelligencer*. Someone had utilised the popularity of the town's two newspapers, the *Leeds Mercury* and the *Leeds Intelligencer* to advertise a meeting for any persons interested in forming the library.¹²⁸ The advertisement appealed to the Leeds townspeople's sense of civic pride: potential subscribers were enticed into joining on the basis the library would help improve the image of Leeds. Subscribers who agreed that 'a library of this Nature' would be 'be an Honour to the Town. And a Capital Advantage to the Inhabitants, especially in Future Time', were desired to attend the 'first general meeting of the subscribers' at Mr Myer's newsroom, Briggate, at 3pm on 15 August 1768.

A vast amount of thought and preparation had gone into the placing of this advertisement. Although we do not know by whom, a number of key decisions had

¹²⁸ *LI*, 9 August 1768, 'Proposal to form a Circulating Library Leeds August 1768'.

already been taken about how the Leeds Circulating Library would operate if the scheme were successful. The price of admission had been determined at one guinea, with an additional fee of five shillings payable annually to cover the cost of purchasing books. A committee 'of twelve or twenty' was to be responsible for running the library and no books in the library's collection were to be sold. These rules were based on those of the Liverpool Library, which had been operating for a decade by 1768. And on display in Leeds for all would-be members to peruse at Mr Myer's newsroom prior to the meeting was a set of laws and regulations of the Liverpool Library and a printed catalogue of its books. Both of which had most likely been obtained and brought to Leeds by Joseph Priestley (his friend Thomas Bentley, was a merchant and trustee of this institution).¹²⁹

At the meeting on 15 August 1768 a Librarian was appointed. Although it is unclear who made the appointment, Joseph Ogle, one of the longest-serving booksellers in Leeds was chosen for this honorary position, and tasked with the responsibility of finding a room in which the library would be situated.¹³⁰ He duly chose the back room of his own shop on Kirkgate. Little else of interest was discussed at this meeting and instead it was decided that a further meeting would be scheduled, 'when the committee, the president and treasurer' were to be elected by the subscribers at large. Initially the date chosen was Monday 5 September, but 'being found inconvenient for the subscribers', it was postponed until 7 September.¹³¹

Thirty-three subscribers were in attendance at the meeting on 7 September 1768, including one woman.¹³² At this meeting the committee of twenty (with whom responsibility for governing the library lay) was chosen from the pool of subscribers. Balloted for the prestigious position of President of the Library was James Kenion, a

¹²⁹ In Warrington Priestley formed a close-friendship with the Liverpool merchant Thomas Bentley (later a partner of Josiah Wedgwood). Bentley was a Trustee of the Warrington Academy, and a member of the Liverpool Library. The catalogue on display in Leeds in 1768 was either Priestley's own catalogue, or one sourced from Thomas Bentley.

¹³⁰ Leeds, Leeds Library, Minute Book 1768-1799, p. 21.

¹³¹ The 5 of September 'being found inconvenient for the subscribers' the meeting was postponed. *LI*, August 30 1768 'The Circulating Library' (no. 793), p.3.

¹³² Mrs Thomas Denison. Leeds, Leeds Library, Share Register of the Leeds Library.

prominent surgeon-apothecary who had been elected Mayor in 1766. The role of treasurer went to the merchant Robert Green whilst almost as an afterthought Joseph Priestley, minister of Mill Hill Chapel was elected secretary.¹³³ It now fell to the committee to organise the opening of the library, and to agree the rules under which it would operate.

The twenty-strong committee met for the first time on 15 October 1768. Alongside Green, Kenion and Priestley were seventeen other committee members, all of whom were members of the local elite. There were two Anglican clergymen – Samuel Kirshaw the Vicar of Leeds and William Lupton the perpetual curate of Headingley – and another medical man – William Hird, a physician on the staff of the Infirmary. But it was merchants who overwhelmingly dominated the ranks of the committee. At least a third of the committee were engaged in the mercantile trade including the prominent merchants Thomas Wroe, Thomas Thursby, Thomas Wolrich, Joseph Oates, James Fenton and William Walker. Other merchant subscribers included Thomas Lee Esq and Jeremiah Dixon Esq both partners in the same firm, and both local figures of some standing and authority. Thomas Lee for instance was deputy receiver of the East-Riding Land Taxes, while Jeremiah Dixon, was undertaker of the Aire and Calder Navigation, deputy-receiver of the West Riding Land Taxes and held the position of High Sheriff of Yorkshire in 1758.¹³⁴

Discussion in this meeting centred upon basic practicalities of the committee, the new library room and its contents. The committee for example had no chairs to sit on at meetings and it was agreed that Mr Green would obtain ‘a convenient number of strong wooden chairs’ for the committee which could in turn be used by ‘any members

¹³³ Minute Book 1768-1799, pp. 23-24.

¹³⁴ For more information about the first committee see Elaine Robinson, ‘The Leeds Library in 1817’, in *A Very Good Public Library: Early Years of the Leeds Library*, ed. by Geoffrey Forster (Wylam: Allenholme Press, 2001), pp. 29-109, (pp. 50-58). It has not been possible to identify the professions of the other six committee members.

of the society who shall chose to read in the library room'.¹³⁵ Our first knowledge of the library's collection also dates from this meeting as the committee donated a number of books to the library. James Kenion, the Library President gave a gift of 'a considerable number of volumes of the *Monthly Review*'.¹³⁶ William Hird gave Ralph Cudworth's *The True Intellectual System of the Universe* (1678), John Green gave a number of works by John Jackson (1686-1763) the clergyman and controversial theological writer, including three volumes of his *Chronological Antiquities* (1752) and the *Memoirs of his Life and Writings* (1764).¹³⁷ When the committee met again two days later, on 17 October, they had a 'strong wooden table' to stand around, a gift from Messrs Thomas and Hatton Wolrich.¹³⁸ The agenda at this meeting was dominated by discussion of library rules and the question of when the Library would open to the public (they had after all employed a Librarian and obtained premises). The first library rule agreed by the committee (as far as is recorded in the minutes) related to the collections. Perhaps prompted by Kenion's gift of the *Monthly Review*, and the perceived popularity of periodicals, the committee agreed that the reviews would 'always lie in the library till the end of the Month in which they were out'.¹³⁹ Meanwhile it was agreed that the Library would open on Tuesday 1 November 1768 and a notice notifying the subscribers of this decision appeared in the *Intelligencer* on 25 October.¹⁴⁰

¹³⁵ It is unclear whether this Mr Green is Robert Green, Treasurer of the Leeds Library, or John Green, merchant and committee member who was also present at the meeting on 15 October. A number of these original chairs are still in the library's possession and in use by current day members.

¹³⁶ Minute Book 1768-1799, p. 25.

¹³⁷ The choice of author would no doubt have been popular, no fewer than nine men from Leeds had subscribed to the work when first published in 1752. Including two of Green's fellow committeemen Robert Green and Samuel Kirshaw. Other men who subscribed to the book were the surgeon William Dawson, James Milner who was later to become one of the first Physicians on the staff of the Infirmary, and Richard Wilson the then Recorder of Leeds. John Jackson, *Chronological Antiquities* (London, 1752).

¹³⁸ Thomas Wolrich also donated nine volumes of the *Spectator* at this meeting. Minute Book 1768-1799, p. 27.

¹³⁹ Parenthesis mine. Minute Book, p. 27.

¹⁴⁰ *LI*, 25 October 1768,

On 1 November, three months after its inception, the Leeds Library opened to the public at the 'Sign of the Dial' (Joseph Ogle's bookshop) in Kirkgate.¹⁴¹ An announcement of the library's opening featured in that day's *Intelligencer* (see Figure 3.1 below). It was open between the hours of ten and four, and accessible via a narrow passageway to the side of Ogle's Dial. The room itself was unstaffed and any subscribers desiring loans rang a bell to alert the librarian. A limited number of books (those the librarian could get ready in time) were in circulation that day. Presumably these books were the ones donated to the library by its committee members, and any others Joseph Ogle, the librarian, could obtain from those entered into the secretary's order book prior to its opening.

Figure 3.1: Advertisement announcing the opening of the Leeds Library in the *Leeds Intelligencer*, 1 Nov 1768¹⁴²

Any of the books that the librarian can have got ready may be taken out and printed tickets, signed by the President, will be delivered to the subscribers. Till a proper Catalogue of the Books can be printed, the Secretary's Book of Orders, in which they are all entered, may be seen at the Library-Room. Those gentleman and ladies who intend to become subscribers but have neglected to give their names, are requested not to omit doing it as soon as possible, that the next Committees may know what Orders they may venture to give before the Catalogue be printed. Subscription may be paid to either Mr Robert Green, the Treasurer, or to Mr Ogle, the Librarian.

N.B. The Library will be open from Ten in the morning, till Four in the Afternoon.

The Leeds Library quickly proved a popular venture among the town's elite. By 1 November 1768, the day it opened to the public, the library already had sixty-eight subscribers on its books (thirty-five of these had joined following the 7 September meeting for would-be subscribers), and still the library's popularity continued to grow as members were attracted by the potential to access a wide range of literature. On 1 November, the very day it opened three subscribers – Joshua Asquith, Hamer Ibbotson and George Oates joined the library. And more were to join once word of the library

¹⁴¹ *LI*, 25 October 1768, p. 3; Minute Book 1768-1799, p. 27.

¹⁴² *LI* Nov. 1 1768 (p.3) no. 802.

spread. Through the month of November a further seventeen subscribers joined the library bringing the library's membership to eighty-eight persons and by the time its first catalogue was published at the end of January 1769 membership amounted to 104 persons.¹⁴³

Once the library was in operation and its subscribers had begun using the establishment, a number of problems began presenting themselves to the committee which had not been accounted for before the institution's opening. Members were desirous of borrowing books outside the library's opening hours, and on Sundays. In spite of once promising the subscribers that 'None of the Books to be sold; but the whole Stock to increase perpetually, without any Increase of the Price of Admission', the Library began experiencing some financial problems and was unable to purchase a number of books.¹⁴⁴ And, then there were problems with the library room. The room itself in the back of Ogle's bookshop was dark, cold, and with its few 'racks' for books, and wooden table and chairs for use of the committee and library subscribers wishing to read – hardly the warm, welcoming convivial space subscription libraries are often made out to be.¹⁴⁵ The committee who were effectively learning how to manage the library as they went, with no rule book other than those of the Liverpool Library to guide them, thus spent their initial meetings after the opening discussing these problems and experimenting with new laws and regulations as they sought to create a library that would be an 'Honour to the Town [... and] an Object of considerable Importance.'¹⁴⁶ On 21 November at their first meeting after the library had opened the committee decided that Joseph Ogle in his position as Librarian was 'absolutely forbidden to give out or take

¹⁴³ *Laws for the Regulation of the Circulating-Library in Leeds: and a Catalogue of the Book Belonging to it, To which are prefixed The Names of the Subscribers* (Leeds: Printed by Griffith Wright, 1768).

¹⁴⁴ *LI* 9 August 1768.

¹⁴⁵ The library room in Kirkgate was described as 'dark' by Thomas Dunham Whittaker. T.D. Whittaker to Lucy Thursby, March 19, 1781. 'The Thursby Manuscripts', *Publications of the Thoresby Society* 2:21, (Thoresby Society: 2011), p. 131.

¹⁴⁶ *LI* 9 August 1768.

in a book on Sunday' or outside of the Library's opening hours.¹⁴⁷ In relation to the problems with the library room, at a general meeting of the subscribers on 5 December the Committee had no choice but to allow the librarian thirty shillings a year 'for fires in the library room [for] six months in the winter and in summer when the weather is damp and also for candles on the committee days'. This particular meeting was also significant for female subscribers. The committee agreed that female members of the society would have 'the privilege of voting by proxy, provided the proxy be a subscriber'. Other decisions related to the collection - they reinforced the rule that 'the Review lie in the library racks till the end of the month in which they were out' and decided that any books returned before 'the time allowed for reading it be expired' could be taken out by any other subscriber 'for the remainder of the term'.¹⁴⁸

The intention from the outset of the Leeds Library's opening had been to follow the example of the Liverpool Library in publishing a list of subscribers, rules and regulations and above all, a catalogue of the collections.¹⁴⁹ Within three months of the library's opening the committee had succeeded in this mission. With the publication of the library's first catalogue in January 1769 the committee could breathe a sigh of relief. The library had 104 subscribers and contained 503 volumes on all manner of subjects ranging from biography and belles lettres, literary and historical works; geography, travel and topography through to grammar and natural philosophy as well as popular magazines and reviews such as the *Gentleman's Magazine*. The largest collections in the library at this date were 'History, Antiquity and Biography' and 'Criticism and Polite Literature', perhaps reflecting an interest among the subscribers for polite literature. The first four volumes of Catharine Macaulay's *History of England* (1763–83), were shelved alongside James Grieve's translation of Sergey Krasheninnikov's *History of Kamtschatka* (1764), George Glass's *History of the Canary Islands* (1764) and James Ferguson's *Young Gentlemen and Ladies Astronomy* (1768), an educational volume for

¹⁴⁷ Minute Book 1768, p. 29.

¹⁴⁸ *Ibid.*, p. 31.

¹⁴⁹ *LI* Nov. 1 1768 (p.3) no. 802.

the younger reader that suggests that even at this early stage in the library's history there was an appetite for scientific works in its collections. The Leeds Library by the close of its first few months of operation had accomplished what had been achieved in nearby rival merchant towns such as Liverpool, Manchester and Warrington: it created a space whereby residents could pursue their leisurely interests and read and borrow books for improvement, education and pleasure. It is here, at the end of a few months' successful operation that we leave the Leeds Library. We turn now to look at the Leeds Library's sister library, the Foreign Circulating Library, but shall return to the Leeds Library in the next chapter when we see how it developed throughout the remainder of the late Georgian period.

3.3 Foreign Circulating Library

The question of whether one should have a commercial or classical education was frequently raised in late eighteenth-century society. An increase in the numbers of young men entering into the merchant and manufacturing trades (rather than the traditional professions of clergy, law and medicine) put pressure on an education system rooted in the classical languages. Naturally one might wonder how a question of whether one should have a knowledge of the classical or modern languages relates to a discussion of eighteenth-century libraries in Leeds. It will become apparent throughout this section, that commerce and education had everything to do with the formation of the Leeds Foreign Circulating Library (henceforth Foreign Library), the library which we now turn to study.

The Foreign Library was formed just one decade after the Leeds Library began operating in the town. The library is frequently conceived of as a simple offshoot of the Leeds Library. Today its collections lie among those of the Leeds Library and little survives in the way of catalogues, laws or lists of subscribers to indicate it was anything other than the Leeds Library's sister library. Yet even if the Foreign Library was merely an offshoot of the Leeds Library, it is worthy of study, because (as far as can be traced) it was the only subscription library dedicated to the purchase of foreign language books

that existed in eighteenth-century Britain.¹⁵⁰ In turn, the circumstances surrounding the Foreign Library's formation in Leeds (which are explored later in this section), together with its solely non-English language collections, suggest that the library was far more important in the town's history than it has been given credit for being.

The purpose of this section is thus to place the Foreign Library more firmly in our knowledge of Leeds's library history. In it I describe some of the basic details surrounding the Foreign Library as far as they are known, including information about when the library was founded, who was involved and where it was located. Having determined this information, discussion turns to why a library dedicated to foreign literature emerged in late Georgian Leeds. In exploring the sequence of events that occasioned the Foreign Library's instigation in Leeds in the late 1770s we shall see that its formation in the town can be located in a wider debate in Leeds's mercantile society about the need to widen knowledge of foreign languages among entrants to the trade. It was a discussion that centred upon the curriculum of the Leeds Grammar School, the eventual outcome of which was to become one of the most hotly anticipated judicial cases of the early nineteenth century.

The Foreign Circulating Library was in existence in Leeds by early summer of the year 1778. Whilst the precise date of its founding is unknown its opening is likely to have been on or near the date 13 May 1778. On that day a folio edition of *Gerusalemme Liberata* (first published in 1581), a popular Italian epic poem, was entered into the Foreign Library. This evidence suggests that the Foreign Library had either begun circulating volumes among its members, or was soon to commence doing so.¹⁵¹ It is unclear how *Gerusalemme Liberata* was obtained by the library, but given its age (the library's edition dates from 1615) it is likely the folio was in private hands and donated

¹⁵⁰ A Foreign Library was established in Manchester, but not until 1830. John Scott, *A Historical Sketch of the Manchester Foreign Library 1830-1903*, (Portico Library, Offprint). The library is cited as dating from 1820 in Edwin Butterworth, *A Statistical Sketch of the County Palatine of Lancaster* (London: Longman & Co, 1841), p. 78.

¹⁵¹ Di Tor Tasso *Gerusalemme Liberata* (Geneva, 1615), still has its Foreign Library label intact, and is extant in the Leeds Library's collections.

from within the private collection of one of the members of the library (whom we will move on to discuss shortly). The collections of the Foreign Library, which included other works in Italian as well as printed material in German and French, were maintained by Mary Robinson, the Leeds Library's librarian.¹⁵² Moreover the Foreign Library was housed in the same back room premises as the Leeds Library and shared the same opening hours (from 10am to 4pm daily except Sundays). All that distinguished the Foreign Library's books (which were 'half bound and uncut') from those of the Leeds, or English Library was a 'capital F' on their bindings.¹⁵³ It is evident from these and other examples that the Leeds Library provided the example for the Foreign Library's *modus operandi*. For instance, the number of books a person could borrow at the Foreign Library, which was limited to no 'more than one book and one pamphlet out at a time, under the penalty of one shilling', was equivalent to the borrowing laws of the Leeds Library.¹⁵⁴ Furthermore the Foreign Library's annual membership fee was based on the rate the Leeds Library charged its members, set at five shillings per annum. And the two libraries largely shared the same membership. In 1782 (the first year for which a list of members of the Foreign Library survives) the Foreign Library had a total of forty-four subscribers, thirty-eight of whom subscribed to the Leeds Library.¹⁵⁵

In spite of these similarities, the Foreign Library was distinct from the Leeds Library in a multitude of ways. It was possible to subscribe to the Foreign Library independently of membership of the Leeds Library and whilst they shared the same annual membership fee, the Foreign Library's initial entrance fee was considerably

¹⁵² Mary Robinson was the daughter of Joseph Ogle, Leeds bookseller and first librarian of the Leeds Library from whom she inherited the position.

¹⁵³ Rule XVIII, *A Compleat Catalogue of the Books in the Foreign Circulating Library at Leeds, with the Laws and a list of the Subscribers* (Leeds, Printed by B. Dewhirst, 1811), p. 8.

¹⁵⁴ Rule XV. *Ibid.*, p. 7. From March 1769 the Leeds Library also allowed a play or review to be taken out at the same time as a book and a pamphlet so long as the pamphlet did not exceed eighteen pence. Beckwith, *Leeds Library*, p. 12.

¹⁵⁵ *A Compleat Catalogue of the Books in the Circulating-Library at Leeds; A Copy of the Laws As they are now in Force; and a List of the Subscribers, To which are attached A Catalogue of the Books in the Foreign Circulating Library at Leeds, with a list of the Subscribers* (Leeds: Printed by J. Bowling in Boar Lane, 1782).

cheaper than its English counterpart. A share in the Foreign Library cost just half a guinea in 1778 whereas new members of the Leeds Library paid a hefty fee of a guinea and a half in the equivalent period. The two libraries likewise differed in their rules and collections. Only 'Works in the Modern European Languages' that is French, German and Italian were permissible in the Foreign Library. And unlike the Leeds Library, which had no rules on what books it would purchase, the Foreign Library from its outset barred the learned or classical languages, (Latin, Greek and Hebrew) from admission into its collection. This decision at first appears rather peculiar, but as we turn to examine the reasons why a library dedicated to modern foreign literature was formed in Leeds in 1778 it will become apparent that the choice of collection owed much to the commercial demands of its core membership base, the mercantile community.

The majority of the Foreign Library's subscribers were merchants. Many of the prominent merchant families in late eighteenth-century Leeds subscribed to the venture, including members of the Dixon, Fenton, Green, Lupton and Oates families, whom we first met in chapter two of this thesis. Other notable early members of the Foreign Library included the merchant partners Horace Cattaneo and Gamaliel Lloyd who we discussed in relation to the Leeds Library, as well as Milnes Rayner (1752-1792) a Unitarian and his Anglican merchant business partner William Smithson (1750-1830).¹⁵⁶ In total some eighty percent of the library's subscribers were drawn from the mercantile community. Many of the other subscribers had interests in teaching. There was a vested educational interest among the subscribers. In total five of the subscribers were schoolmasters in Leeds. Between 1782 and 1785 Joseph Tatham who operated a Quaker School in Leeds subscribed to the Library, while in 1795 a Mr Hodgson (Master of Park Row Academy) and a J.N. Osmond (a teacher of languages on Boar Lane) had also begun subscribing to the Library. All three gentlemen taught modern languages as part of their curriculums. Bearing in mind that Hodgson established the Academy in 1778, his

¹⁵⁶ These men also subscribed to the Leeds Library. Cattaneo and Lloyd joined in September 1768. William Smithson on 16 January 1769 and Milnes Rayner on 10 February 1769. Smithson went onto become Mayor of Leeds in 1781 and President of the Leeds Library for the year 1781 – 1782.

absence from the early catalogues of the Foreign Library seems somewhat surprising but was possibly due to financial issues – he did not begin subscribing to the Leeds Library until 1785/1786 and it is to this period that we ought probably to associate his membership with the Foreign Library.

However, the association of the mercantile community with the Foreign Library stems from the familial and professional ties many Leeds merchants had with the continent. Following the conclusion of their formal studies, children in these families would frequently be sent abroad to complete their mercantile education. The mercantile education of foreign library subscriber Arthur Lupton (1748 – 1807), is one such example. In 1763, aged fifteen and a half, Lupton was sent to study with Leopold Pfeil in Frankfurt for two years before transferring to Lisbon to work on behalf of the family's business.¹⁵⁷ The experiences of Thomas Thursby (1723-1790) provide further exemplification.¹⁵⁸ In November 1755 Thursby travelled from Leeds to Lisbon, Portugal, on behalf of the family business in order 'to expand his understanding of the overseas part of a family business and in preparation for setting up his own'.¹⁵⁹ On the trip the continental languages eluded Thursby who recorded that:

As to Languages, Mr Garnault [the guide?] spoke English Tolerably and Scipio, his Black, a little. All the other Tongues were Portuguese, to which I was an Utter Stranger, having Conversed with none But English hitherto. [...] I should have been very Glad to have Contributed a little, if my friend Garnault would have taken a Proper Method of first Explaining what was said to me, and then Teaching me the Answer I would have made, in Portuguese. But, without being at so much Trouble, he Insisted I should speak Portuguese by Intuition & off Hand, when anything was said to me, and if I asked him what it Meant, he would Repeat the whole Sentence Loudly in Portuguese and, without Explaining a Single Word, Expect an Answer from me in the Same Language, and be not a little out of Humour with me for not Complying. His Obstinacy and Stupidity in this Point made us but Indifferent Company upon the Road [...].¹⁶⁰

¹⁵⁷ Alice Hamilton, 'The Leeds Foreign Circulating-Library c 1779-1814', in *'A Very Good Public Library': Early Years of the Leeds Library*, ed. by Geoffrey Forster (Wylam : Allenholme Press, 2001), pp. 111-171, (121); see also, C.A. Lupton, *The Lupton Family in Leeds* (Ripon: Wm Harrison, 1965).

¹⁵⁸ Lupton was a founder member of the Leeds Library who acted as its secretary between 1769 and 1781.

¹⁵⁹ 'The Thursby Manuscripts', p. 36.

¹⁶⁰ 'The Thursby Manuscripts', p. 40.

By the time he was a member of the Foreign Library, Thursby had set up his own business and dealt in orders worth £10,000 a year. He ranked among the middling clothiers in Leeds and was 'solely concerned with foreign trade'.¹⁶¹ It is plausible to suggest that Thursby's membership of the Foreign Library may have been necessitated by gaining or improving his knowledge of the continental languages, the commercial languages upon which his trade depended.

With the examples of Lupton and Thursby in mind, it is highly likely the formation of the Foreign Library had a utilitarian purpose. In an era when a decline in trade with America (the result of the American War of Independence 1775-1783) prioritised trading connections on the continent one cannot underestimate the significance of a demand among the mercantile community for a foreign collection which could meet the requirements imposed on them by their trading links and by which one could learn, improve, or maintain knowledge of foreign languages.¹⁶² That the library was formed with this purpose in mind, and that a knowledge of the continental languages was necessary for a career in trade, is reflected in the experience of Joseph Priestley.

In the eighteenth century it was necessary for merchants engaged in trade to have a working knowledge of the continental languages. The classical languages were only relevant to those entering into the professions. Joseph Priestley as we saw earlier in this chapter, was destined to enter the ministry, and his early education hence consisted primarily of an education in the classical languages. However a brief change of circumstances in 1755 meant Priestley began to prepare to enter the family trade of commerce instead. In preparation for a spell in Lisbon where he would learn the fundamentals of the trade, he began learning French, High Dutch (German) and Italian,

¹⁶¹ The Thursby Manuscripts', p. 66; See J. Extracts from an old Leeds Merchants' Memorandum Book 1770-86', *Publications of the Thoresby Society*, XXIV (1915), 36-7.

¹⁶² On Leeds's trading connections with the American colonies, see Peter Maw, 'Yorkshire and Lancashire ascendant: England's textile exports to Philadelphia and New York, 1750-1805', *The Economic History Review*, 63:3 (2010), 734-68.

which allowed him to undertake some translation work for an uncle already engaged in trade.¹⁶³ Although Priestley's hiatus from entering the clergy was only brief, his example further denotes the significant link between entering the mercantile trade and the learning of modern European languages. Furthermore we can trace the Foreign Library's establishment to a furious debate in Leeds about the value of the classical languages in the modern world of commerce.

In late Georgian Leeds the teaching of the modern languages took place predominantly in the private schools that operated in the town. Schools such as Thomas Hodgson's Academy whose formal opening in 1778 was announced in the *Leeds Mercury*:

Mr Hodgson wishes to inform his Friends and Others, That on Monday Next the 12th Instant, he will Open an Academy... for the Instruction of Young Gentlemen, in the English, Latin, Greek and French languages.¹⁶⁴

At the Leeds Grammar School the modern languages were prohibited for much of the eighteenth century. But one year prior to the formation of the Foreign Library the question of whether they should be included in the curriculum was raised. In 1777, and again in 1779 the Trustees of the Grammar School decreed it necessary to extend the School's curriculum so as to include mathematics and the modern (commercial) languages:

That as soon as the Committee shall think it convenient with respect to the rents and profits of the school estate being sufficient to bear the additional charge a master shall be appointed for the purpose of teaching to write and accounts such boys as shall attend at the Free School to learn Latin and Greek and also that another master shall also be

¹⁶³ Schofield, *Enlightenment*, p. 12.

¹⁶⁴ *Leeds Mercury* 1778.

appointed to teach such boys the French tongue and other foreign languages and that sufficient salaries shall be appointed for such masters.¹⁶⁵

The move was encouraged by the high proportion of merchants engaged in business in Leeds and sanctioned by the Pious Uses Committee which was responsible for the management of the Grammar School. This committee – which was led by Dr. Kirshaw, the Vicar of Leeds alongside eleven other prominent citizens of the town – was intent on improving the School and the education it offered to Leeds's citizens. Although some claim that falling enrolment was a vital factor in the Leeds Grammar School committee's initial (and indeed continuing) decision to endorse an education in the commercial languages throughout the eighteenth century, it was no doubt encouraged by the circumstances of the trustees themselves, a large number of whom were actively engaged in the trade. This decree, however, was not enforced by Dr. Goodinge the Master of the Grammar School (and Foreign Library subscriber) and the resolution was raised a number of times over the subsequent decades. In 1791, a sub-committee of Trustees was formed to discuss the possibility of appointing the two new masters, but Whiteley (the new Master) and his second Master, Rev Joseph Swaine (1783-1815) refused on the basis that this would change the very principles the School was founded upon. The case eventually went to the Court of Chancery in 1795 and in 1797 the Master of the Chancery's published a report in favour of the Trustees with a recommendation that an enquiry be held on whether it be 'Proper and for the benefit of the Charity to have any other master or masters to teach writing, arithmetic and other languages besides the Greek and Latin'.¹⁶⁶ The Report stated that there was nothing in the original institution that excluded the teaching of subjects useful to trade and commerce, and that the Master of the Chancery approved the additional employment at the School of a German master, a master for French and a master for teaching algebra and mathematics. On the other hand it ruled that the presence of other educational

¹⁶⁵ A.C. Price, *A History of Leeds Grammar School from Its Foundation to the End of 1918* (Richard Jackson, 1919); Leeds, West Yorkshire Archives, WYL 160/197, Leeds Pious Uses Committee, Minutes, Accounts & Other Records, 28 Jan., 1779, p. 543.

¹⁶⁶ Davies, *From Bridge to Moor*, p. 42.

establishments in Leeds providing an education in writing and arithmetic meant it would be detrimental to teach these subjects at the Grammar School.¹⁶⁷

Both parties objected to the Report. The Trustees insisted that given that 90% of the inhabitants of the town (with a population of 60,000 by this date) were brought up in trade and commerce the school ought to be teaching arithmetic and algebra over mathematics, and that it ought to be possible to appoint one master to teach both German and French. The Master and Usher of the School had a five point objection to the Report. Two points related to the number of Masters the original scheme had provided for and that there had been no complaint two teachers was not enough to teach the pupils at the School. The Third related to the School's finances, and the other two to the issues originally raised by the Trustees:

The school was intended for a Grammar School only, not for algebra, the mathematics or the modern languages.

The utility of French and German must depend upon accident and political and commercial circumstances and so they ought not to be made a permanent part of the institution

The matter was finally brought to a close in 1805, when the Lord Chancellor Lord Eldon commented on the case. Eldon condemned the Report of the Chancery and accused the Trustees of wanting to turn the School into a 'commercial academy' for their own purposes. It was:

A scheme to promote the benefit of the merchants of Leeds and I [Lord Eldon] fear that the effect will be to turn out the poor Greek and Latin Scholars altogether. There is no authority for thus changing the nature of the Charity, and filling a School intended for the purpose of teaching Greek and Latin with Scholars learning the German and French languages, mathematics and anything except Greek and Latin, and the question for me is not what are the Qualifications most suitable to the Rising generation of the Place, but what are the

¹⁶⁷ These included a boarding schools for boys in 1769 which offered accounting, arithmetic, geometry, trigonometry and "the doctrine on mechanics with the theory and application of the mechanic powers". See advertisements in the *Leeds Mercury*, 3 January 1769, 16 January 1770.

Qualifications intended by the Founders of the Charity. I am of opinion on the evidence before me that the Free School in Leeds is a Free Grammar School for teaching grammatically the learned languages according to Dr Johnson's definition.¹⁶⁸

This decision had a profound effect not just for the curriculum in the Leeds Grammar School (the litigation and curriculum were abandoned) but for schools across the country. The ruling effectively set a precedent for grammar schools whereby they were restricted to the principles they were founded upon: in the case of Leeds this meant only the classical languages were permissible subjects. It was a decision later branded by A.F. Leach as 'carried to dismay to all interested in the advancement of education and nearly killed half the schools in the country.'¹⁶⁹

Tellingly a number of those involved in the dispute subscribed to the Foreign Circulating Library. Perhaps Rev Dr. Thomas Goodinge had no need for foreign language books in the Grammar School's library, because he himself was a subscriber at the Foreign Library. He was one of the earliest subscribers of the Foreign Library, a member of the Library between 1782 and 1785 (although as these are based on the dates of the available catalogues he may well have subscribed for a longer period). The second master of the School (between 1763 and 1783) Rev John Fawcett of Call Lane Chapel, who was likewise a member of the Foreign Library between 1782 and 1795. On the basis of the collections of the Foreign Library and the slight impact the disputes in the Grammar School had on the direction it took, it is thus little wonder that in 1815 when Fawcett retired it was John Sheepshanks (who is listed as a Foreign Library subscriber in the 1811 catalogue) who was appointed acting head of the Grammar School. It was an appointment which finally allowed the Trustees to implement their plans to extend the curriculum of the school and which quickly resulted in a rise in student numbers.

¹⁶⁸ Davies, *From Bridge to Moor*, p. 43.

¹⁶⁹ A.F. Leach quoted in R.S. Tompson, 'The Leeds Grammar School Case of 1805', *Journal of Educational Administration and History*, 3:1, (1970), 1-6, (1).

In Leeds, the establishment of the Foreign Library was thus a critical juncture that preceded debate about the importance of modern languages in the education of those with mercantile intent in later life. We will see in the next chapter whether the outcome of the debate had an impact on the collections and operations of the Foreign Library throughout the remainder of the late Georgian period. Now, however, we turn to examine the last of Leeds's eighteenth-century subscription libraries – the New Subscription Library. It too was mired in controversy, although unlike the Foreign Library it reflected not the commercial changes ongoing in late Georgian Leeds, but the radicalisation of the township.

3.4 New Subscription Library

Leeds was undergoing a social, economic and financial boom in the final decade of the eighteenth century. Its merchants were prospering with some 130 firms operating in the woollen trade in the years 1783 to 1808. Their affluence was visible to all who visited the town's assembly rooms, three libraries, or the newly opened music hall on Albion Street, Leeds's newest street. In these affluent years, another subscription library was formed in Leeds. The New Subscription Library began operating in the town in 1793.

In this section I explore the motivations behind the establishment of yet another subscription library in Leeds. I examine the theory that the library was formed as a breakaway institution from the Leeds Library and assess why this might have been the case. Finally I trace the history of the New Subscription Library to the year 1801 when a visitor to Leeds remarked upon its seditious nature, and asserted that it was called the 'Jacobin' Library.

On 13 February 1793 a meeting was held to discuss the formation of a new library in the town and the 'New Library' was officially founded. The meeting took place at Leeds's oldest coaching inn, Mr Hick's pub 'the Old King's Arms' on Briggate, opposite

the junction with Boar Lane, the site of the Royal Mail departures to London and the meeting place of the town's Magistrates.¹⁷⁰ It was a popular occasion – thirty gentlemen, mainly merchants, attended the meeting and formed the initial subscription base of the library. Many locally prominent figures in Leeds's society were among those present including William Wood, Joseph Priestley's successor as Minister of Mill Hill Chapel, William Walker (son of a former minister of Mill Hill), a woollen merchant and from 1776 a partner in Beckett's Bank; and Thomas Bischoff of Call Lane Chapel, also a merchant and banker.¹⁷¹ But what motivated these men to establish yet another subscription library in Leeds?

The founding members placed their decision to form the New Library solely at the door of the Leeds Circulating Library. That library they claimed was 'greatly overburdened with Subscribers, so that it is very difficult for Persons who do not frequently visit the Library, to get new or popular Books'.¹⁷² Membership of the library was limited to 100 subscribers, in order that the members could have access to 'new or popular books' and certainly implies there was some truth to this statement. So too, did the majority of its initial members continue to maintain their subscriptions to the Leeds Library. Figures who maintained membership of both institutions included the two members of the Oates family, the Bischoffs, Benjamin Gott, Mr Logan, George Walker, the Reverend Mr Wood, William Fenton, Mr Child, Wade Browne Esq, and John Marshall.¹⁷³ In turn, parallels can be drawn between the motivation of the New Library's founders and attempts to establish a new literary institution in the nearby town of Halifax in the nineteenth century. As in Leeds, prominent members of Halifax's society

¹⁷⁰ Proposal for a New Subscription Library. Broadside 1793.

¹⁷¹ From 1827 Thomas Bischoff was Superintendent of the Leeds Branch of the Bank of England. Prior to this he had been involved in the New Bank (established in Leeds in 1777). See Edward Parsons, *The Civil, Ecclesiastical, Literary, Commercial, and Miscellaneous History of Leeds, Halifax, Huddersfield, Bradford, Wakefield, Dewsbury, Otley, and the Manufacturing District of Yorkshire* (Leeds: Hobson, 1834), p. 108.

¹⁷² Proposal New Subscription Library.

¹⁷³ Based on an analysis of the 1802 Leeds Library Catalogue. *A Compleat Catalogue of the Books in the Circulating Library at Leeds: A Copy of the Laws as they are now in force, and A List of Subscribers* (Leeds, Printed by Thomas Gill, 1802).

had established a subscription library in 1768. By the nineteenth century there was dissatisfaction among some members of the subscription library. They were struggling to access books and intended on establishing a book club so that they could purchase the items they wanted. A possible reason for their dissatisfaction can be linked to Anne Lister. Anne Lister recorded in her diary in the early nineteenth century that she had given the librarian 'his yearly half five for letting me have what books I like'.¹⁷⁴ One cannot help but wonder if a similar situation of bribery had presented itself at the Leeds Library and was causing the members their apparent difficulties in accessing the new and popular books.

The key concerns of the New Library subscribers reflected their motivation for forming the library. At the meeting on 13 February they debated what books the library ought to purchase? How many members would it have? How much would membership cost? Who would manage the library and where would it be situated? In answer to these questions the subscribers passed fifteen resolutions that formed the basis of its rules and regulations. The first of these resolutions confirmed the title of the 'New Library' as the New Subscription Library. The second related to the types of books they hoped to purchase. The subscribers decided to purchase only works published in English which are 'as much as possible adapted to every Variety of Taste, excepting only those Books which are injurious to good Morals'. Now they had to find somewhere to house the collection.

To that end, decisions about management of the library initially fell to two sub-committees formed from among the subscribers present at the meeting. The first sub-committee which featured John Marshall, Benjamin Hird MD, William Walker, Mr Logan and Josiah Oates, was responsible for appointing a Librarian and procuring premises for the Library. Although no record survives as to whom they appointed as the first librarian of the library, we do know that they chose to situate the collections in rented accommodation on Albion Street. The decision was ingenious. Albion Street, Leeds's

¹⁷⁴ Calderdale, West Yorkshire Archives, SH7/6/1-26 Diaries (1806 – 1840).

newest street (it dated from 1792) was situated to the the west of Briggate and connected Boar Lane with the Upper Headrow. It was a convenient location in central Leeds, within a stone's throw of the cloth halls of the town where many of these men undertook their trade, and (unlike the Leeds Library on Kirkgate), was close to the residences of the subscribers, many of whom lived just beyond Albion Street in the West End of Leeds on Park Square.¹⁷⁵ The other sub-committee was responsible for formalising a set of rules for the governance of the Library. It consisted of six subscribers, John Plowes Esq, Wade Brown Esq, Rev Mr Wood, Rev Mr Bowden, J. Hamilton MD and William Smith. The management of the library beyond this initial meeting was entrusted to a committee of twelve subscribers, (half of whom were replaced annually), who would run the library and purchase the books. This committee was elected on Monday 18 March at 4pm, at another meeting of the thirty founding members held at 'the Old King's Arms'. No record of the names of those who formed the initial committee is extant, but we do know at this meeting that tickets were distributed to the subscribers, and payments made to the Treasurer, Thomas Bischoff. Soon after this date the New Subscription Library opened to its members.

Membership of the New Subscription Library was exclusive and reflected the status of the subscribers, many of whom were among the local society elite. A share in the library cost two guineas in addition to the annual fee of one guinea payable by the subscribers. Some of the expense of membership can be accounted for by the numbers allowed to subscribe to the New Library at any one time. Membership was limited to one hundred subscribers, and in an era when many of Leeds's elite were moving out of the township boundaries were placed on the area from which subscriptions could be drawn. Subscribers had to live within the Parish of Leeds, although the original thirty subscribers were excluded from this particular rule. Membership of the library was intended to be exclusive. New subscribers could not join the library without being elected to its ranks, and this rule applied even to the sale of shares. Potential members

¹⁷⁵ Beresford, *East End, West End* p. 169.

were required to have their name displayed in the library room for two weeks prior to admission. They then faced a vote of membership at a meeting with a minimum of twelve subscribers in attendance and needed to secure the approval of at least two-thirds of these subscribers.

This level of exclusivity may explain why the New Subscription Library went on to gain a radical reputation in Leeds. In 1801, Joseph Farrington (1747-1821), a landscape painter briefly residing in the town privately declared the New Subscription Library to be a 'Jacobin' outfit.¹⁷⁶ Characteristic of the highly politicised politics of the revolutionary era, this was a dangerous statement with obvious implications for the subscribers of the New Library.

There is also a Library which probably from having been established by certain people is called the Jacobin Library. — The other, the Old Library, on the contrary is called the Anti-Jacobin Library.¹⁷⁷

Could the Library have indeed been 'Jacobin' as the assertion implies? Perhaps Farrington, was privy to knowledge provided by local informants – he observed after all that it was the identity of the founders that had led to the New Library being designated the 'Jacobin Library'.

Although membership of the Library included Anglican-Tories and members of the Corporation such as Benjamin Gott, it equally included some of the town's more politically and religiously radical citizens. Among the founding members were Unitarians such as the Oates', John Marshall and William Wood who succeeded Joseph Priestley as minister of Mill Hill Chapel in 1773. These men were later joined by various other

¹⁷⁶ For more information on Farrington, see Evelyn Newby, 'Farrington, Joseph (1747–1821)', *ODNB*, [<http://0-www.oxforddnb.com.wam.leeds.ac.uk/view/article/9161>, accessed 20 February 2014].

¹⁷⁷J. Farrington, *The Farrington Diary vol. one*, ed. J. Greig (London: Hutchinson & Co, 1923-1928), p. 315.

protestant dissenters (dissenters being those sorts of people whom we most associate with radicalism), including Edward Baines who moved to Leeds in 1795 from Preston.¹⁷⁸

Edward Baines (1774-1848), is best known for his editorship of the *Leeds Mercury* between 1801 and 1848 which under his editorship became the liberal mouthpiece to Wright's Tory *Leeds Intelligencer*. However, in the late eighteenth century Baines, a dissenter who worshipped at both Mill Hill and Salem Chapels in Leeds had radicalistic tendencies. In Preston, Baines had been heavily implicated in radical movements, a lifestyle choice which continued upon his arrival in Leeds in 1795 where he had travelled to complete an apprenticeship with John Binns and George Brown, the then publishers of the *Mercury*.¹⁷⁹ Upon arriving in Leeds Baines immediately became associated with radicalism. He joined a 'Reasoning Society' led by Mr Skelton, a member of the Society of Friends, and John Talbot a grocer and tobacconist (and brother of Baine's future wife Charlotte) which had been operating in the town since 1793. The society, of which Baines quickly became the mouthpiece, went on to be investigated by Whittel Sheepshanks, Mayor of Leeds, for links to sedition, although no connection was found and the society was allowed to continue unabated.¹⁸⁰ So too, did Baines join the New Subscription Library, presumably on the suggestion of two of his close friends, the dissenters William Wood and Thomas Langdon, both of whom were members of the New Library. It is in Baines's association with the New Library that we can see the origin of rumours of its radical associations.

By the late eighteenth century the voice of dissent was all but silent in the Leeds newspapers. The *Leeds Intelligencer* was progressively becoming anti-Reform and anti-Dissent, while the *Leeds Mercury* was hardly representing Whig interests. A small group of dissenters decided a platform was necessary to voice these concerns and

¹⁷⁸ Baines had joined the New Subscription Library by 1802.

¹⁷⁹ E.P. Thomson claimed that Baines 'had once been secretary of a "Jacobin" club in Preston. E.P. Thomson, *The Making of the English Working Class* (1982), p. 19; 83. For a more detailed account of Baines's early life in Leeds, see Thornton, *Mr Mercury*, pp. 13-31.

¹⁸⁰ David Thornton, *Mr Mercury*, p. 22.

decided to launch a third newspaper in Leeds. The group included John Marshall, Benjamin Hird, Peter Garforth, a cotton spinner of Embsay near Skipton, and James Bischoff a wool merchant and manufacturer; all of whom (with the exception of Peter Garforth) were members of the New Library.¹⁸¹ Edward Baines, who had completed his apprenticeship with Binns and Brown in 1797, and had set-up his own private printing business, was chosen as the person to front the new venture. However upon hearing of Baines' involvement in the group, Esther Binns (John Binns's widow) offered to sell him the *Mercury* instead. In 1801 eleven backers ensured Baines had the financial help necessary to secure the paper. Of the original group who had sought to establish a dissenting voice in Leeds, only Marshall and Hird had the financial means necessary to back Baines, but they were joined by a number of other dissenters: Thomas Bischoff, Thomas Johnson, John Hebblethwaite, William Walker, Peter Garforth Jun, Richard Lee, Richard Slater Milnes and James Milnes and John Pearson all contributed to the scheme. These men were all connected by their non-conformist tendencies, but more importantly by their association with the New Library. Only three of those men listed, Peter Garforth Jun, Richard Slater Milnes and James Milnes are not known to have subscribed to the New Subscription Library.¹⁸² The power play that was Baines's takeover of the *Mercury* in March 1801, marked the start of the upset of the uneasy alliance that existed between Anglicans and dissenters, Whig and Tory in late Georgian Leeds. The New Library members involved had broken almost every unwritten rule that had underpinned local society, and unsurprisingly the New Library's reputation as an institution strongly associated with dissent and radicalism was cemented in Leeds's history. Going forwards, we will examine the impact this had on the New Subscription Library's development in the nineteenth century, in the final section of the next chapter in this thesis.

¹⁸¹ Garforth may well have been a subscriber at an earlier date: a Mrs Garforth is listed as a member in 1805 and it is a strong possibility that Mr Garforth had previously held the share. *A Catalogue of Books in the New Subscription Library in Albion Street Leeds* (Leeds: Edward Baines, 1805).

¹⁸² All the others are listed as members in 1805. Hird and Pearson put forward £50 each; the others each contributed a loan of £100 toward the cost of purchasing the lease.

3.5 Conclusion

In this chapter we have explored the initial formation of Leeds's Georgian libraries. We have traced their emergence in the town from the small groups of individuals with the initial idea to form a library, to within a few months (in the case of the Leeds Library) the glory associated with a membership of over 100 subscribers. In turn, we have begun to see how the interests of different groups of subscribers, ranging from medical to mercantile and ministerial, played out in the establishment of each library. We have assessed some of the possible motivations for the foundations of Leeds's subscription libraries, and on the basis of our analysis of the medical library examined some of the associational and professional reasons for why subscription libraries emerged in late Georgian Leeds. This is particularly evident in the example of the Foreign Library whose collections were formed with an educational purpose in mind, affording Leeds's merchants the opportunity to learn, improve, or maintain their knowledge of foreign languages. Our next chapter continues to explore the role that professional motivations had upon the Leeds Libraries. Chapter four explores how the Leeds libraries developed beyond the intentions of their founding members, and assesses how the libraries interacted with each other in the changing landscape of late eighteenth- and early nineteenth-century Leeds.

Chapter 4

Working Libraries: The Development and Operation of the Leeds Subscription Libraries

In this chapter we look beyond the earliest years of operation in the libraries and investigate how Leeds's subscription libraries operated in the late eighteenth and early nineteenth centuries – a period which saw the town become increasingly industrialised and, in turn, politically and religiously radicalised. The questions first raised in chapter three of this thesis will form the basis of our discussion in this chapter. How did the libraries function? Who used the libraries? And how and why did they use the libraries? So too, will we consider how these changed throughout the period 1770-1815, the years which are considered in this chapter.

The chapter examines each library in turn and adopts a narrative strategy towards each. Thus it begins with the Medical Library. It seeks to establish how the library operated beyond the year 1768 – the year for which there exists a record of the medical society's membership (the medical society being the society from which the medical library emerged). In doing so, the chapter continues to investigate the links between the medical library and the General Infirmary at Leeds (which we first noted in chapter three) particularly in relation to the establishment of the latter's permanent premises on Infirmary Street in Leeds in 1771. Closer inspection is made of the collections of the Medical Library, and we see how the growing collections continued to be important to, and utilised by Leeds's medical men throughout the late Georgian period. Next, the chapter turns to the Leeds Library, showing how the competing demands of its prime membership base – merchants and ministers, coupled with a growing body of medical subscribers – impacted upon its operations in the late Georgian period. We shall consider whether decisions made by successive library committees in the late eighteenth and early nineteenth centuries about which books the library should purchase, or where the collection ought to be housed, were influenced by the

associational and occupational needs of the library's subscribers. We then turn to the Foreign Library. Here, the competing operational needs of this library within a library, such as lack of space and premises, are related to the demands of the core body of merchant subscribers with their interests in European trade. In turn the section seeks to assess whether the end of the American War of Independence and the subsequent growth of the American trade in the 1790s negated the need for a Foreign Library in Leeds. Finally, the chapter turns to examine the New Subscription Library's development in the early nineteenth century. I seek to establish whether the main reasons for the library's foundation – overcrowding and lack of access to books in the Leeds Library – contributed to the New Library's development beyond 1793. I assess the library's collections and argue that rather than limiting itself to the same confines as the collection at the Leeds Library, it established a wide-ranging collection that helped provide it with separate identity from the other subscription libraries in Leeds. I seek to show that the New Library continued to meet the core needs of its subscribers – the merchant-manufacturers and tradespeople of Leeds.

4.1 The Medical Library at Leeds

Leeds was a significant medical centre in the late eighteenth century. It had a vibrant medical profession featuring qualified practitioners who had received professional training in London, or at the Scottish university towns of Edinburgh and Glasgow; it was one of a number of provincial towns with an Infirmary (established in 1767), and, most importantly of all, by 1768, it featured a subscription-based medical library. As we saw in chapter three the formation of this library was closely connected to the establishment of the General Infirmary at Leeds. Its origin lay in the collective sense of identity occasioned by the coming together of medical men in Leeds in the honorary positions of physicians and surgeons of the faculty of the Infirmary, and their desire to improve the practise of medicine in the town. In that chapter too, I showed how closely affiliated the membership of the Medical Library and the Infirmary in Leeds was in the year 1768, and the close association of these two institutions is a matter we return to frequently throughout this chapter.

Leeds continued to act as an important provincial centre for medicine throughout the late eighteenth and early nineteenth centuries. Whilst the medical culture in nearby York in these years centred upon liberal learning and politeness, Leeds's medical culture and identity was focused on professionalisation, improvement and vocation-specific knowledge.¹⁸³ In large part this centred upon its Infirmary and the Medical Library. We will explore the development and operation of the Medical Library in the late Georgian period, see what collections it developed, how its membership grew and establish what premises it maintained. In looking at how the library functioned and was run in this period, we shall in turn assess the importance of the medical library for the medical profession within Leeds and beyond; just a decade after its establishment the Leeds Medical Library acted as a guideline for medical library formation in Liverpool.¹⁸⁴

We return to our analysis of the Medical Library in 1774, the year in which the Medical Library was formally incorporated in the General Infirmary at Leeds. In this section, I examine the reasons for the library's formal incorporation into the Infirmary, and show that the decision lay in perceived notion of improvement and benefit that a medical library would bring to medical provision in Leeds. The collections and membership of the medical library then become the centre of focus as we consider the library in the year 1784, the year in which there appeared a printed catalogue of the medical library. Particular attention will be paid here to the questions of which books the medical library purchased for its collections, how it purchased them and how medical men in Leeds, removed from the metropolitan centres of medicine and medical publishing, were kept abreast of developments in the field of medical publication.

The Medical Library and Infirmary were closely interconnected. The library, whose membership largely consisted of members of the Faculty at the Infirmary, maintained an informal association with this institution. The early collections of the

¹⁸³ Brown, *Performing Medicine*, p. 7.

¹⁸⁴ Liverpool Medical Library was formed in 1779 along the same lines as the Leeds Library. Samuel Foart Simmons, *The Medical Register for the Year 1780* (London: J. Murray, 1780).

medical library, which consisted of those items ordered by the medical society were, as far as we know, housed on-site at the Infirmary for purposes of ease of access. Initially then, the library collection was housed in Kirkgate, where the Infirmary rented temporary premises. In 1771 the Infirmary moved to a new purpose-built location in Leeds, and one assumes, the library went with it. The new building, which included an operation room, 'elaboratory' and chapel, was situated on Infirmary Street, a new street to the west of the centre of the town and close to the town's cloth halls.¹⁸⁵ The move proved integral to the history of the medical library and marked the beginning of a process in which the library's hitherto informal relationship with the Infirmary became formalised. The members of the library decided to formalise their relationship with the Infirmary in 1775 when the Medical Library's books officially became the property of the Infirmary. In this year, the members of the Medical Library agreed to donate their collection of books to the Infirmary, whilst any subsequent books purchased in the name of the library would in turn become the property of the Trustees of the Infirmary. The accession of the medical library collection featured in the Infirmary's *Annual Report* for the year September 29, 1774, to September 29, 1775 (published in December 1775) which stated that:

The Gentlemen who are engaged in the Practice of Physic In this Town, having formed a Plan for purchasing a Medical Library by a Subscription among themselves, agreed to Make a Present of the Books to the General Infirmary [at Leeds]. Books are deposited in the Infirmary as they are purchased And are to remain the Property of the Trustees; the Purchasers only reserving themselves the Right of per[using?] Books, according to some Regulation framed for the Purpose. As the Improvement of the Medical S[ector] is a Matter of Universal Concern, it is thought proper [to make] Notice of this useful Accession to the Furniture of the Infirmary. Some valuable Presents of Books have been Received, and some Subscriptions from Gentlemen Not of the Faculty. The Advantage of this

¹⁸⁵ Leeds, West Yorkshire Archives, WYL 2295/13/1 Building committee meetings, minutes & loose papers (2 vols) 1768-1774.

S[cheme] Ultimately accrue to the afflicted, and therefore [is] An Object worthy the Attention of the benefactors.¹⁸⁶

The impact of this shift of ownership on the subscribers of the library appears to have been negligible. The library still functioned as a subscription library – the subscribers still paid an entrance fee to join the library, and an annual subscription which went towards the cost of purchasing books, and they retained their borrowing rights.¹⁸⁷ The main impact of this change was probably felt by William Carr, house-apothecary at the Infirmary who was responsible for care of the library and acted as its librarian.¹⁸⁸ The house-apothecary may well have informally been acting as librarian from the library's inception, but the move was formalised with transference of property of the library to the Infirmary – Carr's salary was advanced from an annual income of thirty pounds to thirty five pounds a year at an annual meeting of the Trustees in October 1775 (the same meeting at which that year's annual report was first discussed), partially it appears, to compensate for the formalisation of this addition to his duties.¹⁸⁹ As librarian, the Infirmary apothecary oversaw the administrative cares of the Library, kept account of its stock, maintained a manuscript catalogue of the library and was responsible for checking books out of and back into the library.¹⁹⁰ One of Carr's first duties as librarian would have been to record and identify the books in library's collection. This was done by virtue of the addition of a bookplate which identified that the item belonged to the 'Leeds Infirmary Medical-Library', stated its date of entry into the collection, and gave information such as the time allowed for said item's circulation

¹⁸⁶ Part of the report (the only known surviving copy) which belonged to William Hey, has been torn away and some words are missing. *The Annual Report of the State of the General-Infirmary at Leeds, From September 29, 1774, to September 29, 1775* (Leeds: printed for private circulation, 1775), p. 1.

¹⁸⁷ For a list of regulations of the Medical Library see *An Alphabetical Catalogue of the Books in the Medical-Library at Leeds; A Copy of the Laws, and a List of the Subscribers* (Leeds: J. Bowling, 1784).

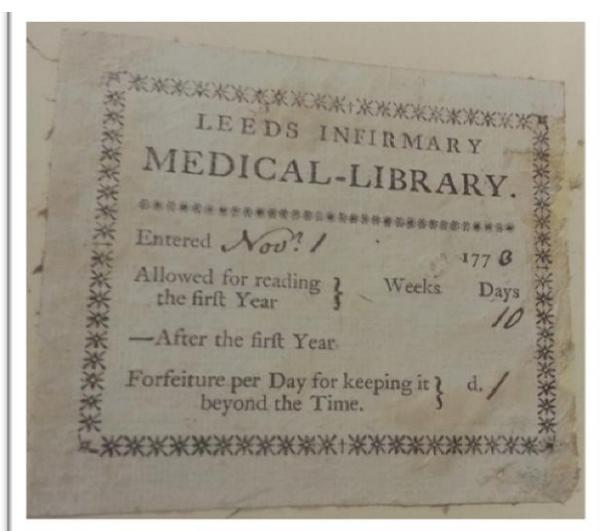
¹⁸⁸ Rule 9 of the Library's laws stated 'That the House-Apothecary be Librarian' see *Books in the Medical-Library*, p. 11.

¹⁸⁹ WYL 2295/1 Quarterly Board, p. 110.

¹⁹⁰ For a full list of the librarian's duties, see *Medical-Library at Leeds*.

and the fine per day for keeping it beyond this period (see figure 4.1). Such duties were a considerable for a house apothecary who was already required to prepare medicines, and carry out other such of his own duties as apothecary, and this was recognised by the Infirmary's trustees. In May 1776 they raised the apothecary's salary to forty pounds per annum (backdated to the previous September) and 'in consideration of his great Diligence and good Behaviour in the Execution of his office of House Apothecary' awarded Carr a gratuity of five guineas.¹⁹¹

Figure 4.1: Medical Library Bookplate (1770)¹⁹²



Source: Charles White, *Cases in Surgery with Remarks* (1770). Health Sciences Historical Collection SC.2. Reproduced with the permission of Special Collections, Leeds University Library.

Whilst physical management of the library fell to the house-apothecary, decisions about the library's collection continued to be informed by the subscribers at large. The library contained a request book (maintained by the librarian) where subscribers could recommend items for purchase.¹⁹³ With ownership of the collection

¹⁹¹ WYL2295/1 Quarterly Board, p. 118.

¹⁹² Bookplate entered into Medical Library on 1 November 1770: Charles White, *White, Charles, Cases in Surgery with Remarks [...] to which is added, An Essay on the Ligature of the Arteries* by J. Aikin, Surgeon. (London: Printed for W. Johnston in Ludgate Street, 1770).

¹⁹³ Rule XVIII 'That a Recommendatory Book be kept by the Librarian, for any Subscriber to insert the Titles of such Books as he may wish to have purchased', *Medical-Library at Leeds*; p. 23.

having passed to the Infirmary, the membership fees rather than covering rent, upkeep and other such associated costs (as membership fees were usually required to do), went toward the cost of purchasing books. Initially membership of the Medical Library cost one guinea per subscriber and an annual fee of half a guinea thereafter, but reflecting the library's change in circumstances, by 1779 this yearly fee had been reduced to five shillings which was spent directly on the collection.¹⁹⁴ Books were purchased for the library every three months at quarterly meetings of the subscribers which took place in January, April, July and October. At these meetings any book could be purchased for the collection providing the subscribers reached a majority decision in favour of the item and that there was enough money in the library funds to cover its purchase. But this was not the only means by which books were purchased for the library. The library had an additional purchasing committee which met monthly and had the power to order any new publication as long as it did not exceed six shillings in total. Membership of the purchasing committee was restricted solely to the Faculty of the Infirmary and a minimum of three persons were required to be in attendance at these meetings. The committee was elected annually each year at the general meeting of subscribers in July, when the treasurer of the library was also elected from among the subscribers at large.¹⁹⁵

In the eighteenth century Leeds was far removed from the metropolitan print centres of Edinburgh and London. The purchasing committee and the members at large thus relied on catalogues of books, like *Murray's catalogue of books in medicine, surgery, anatomy, natural history, & c. For the use of the faculty, and practitioners in general* (1783), to help inform their recommendations and the library's ultimate purchases. This catalogue, one of a number issued from the late 1770s onwards by John Murray, the London publisher, contained 'most modern books and a good many ancient

¹⁹⁴ Simmons, *Medical Register* 1779, p. 146.

¹⁹⁵ William Faber a surgeon with premises at the back of shambles in Leeds, was treasurer for the year 1784.

ones'.¹⁹⁶ Leeds's practitioners were also dependent on reviews of medical books contained in the monthly periodicals. Roy Porter has shown that the *Gentleman's Magazine* frequently contained articles and reviews on the latest advices and treatments, as well as notices of recently published books in physic, but less is known about the extent to which these sorts of articles featured in other eighteenth-century periodicals and reviews.¹⁹⁷ While there is no direct evidence that Leeds's medics relied on the *Gentleman's Magazine* for recommendations when deciding which books to purchase at the Medical Library, they certainly relied on other monthly periodicals for news of the latest medical publications and in some cases, even went on to purchase medical texts as a result. William Dease's *Observations on Wounds of the Head* (1776) for instance, was purchased by the Medical Library on the basis of a book review which its surgeon William Hey read in the October 1776 edition of the *Critical Review*.¹⁹⁸ In that month Hey was treating a patient with a laceration of the skull when he came across the review of Dease's *Observations*: 'I had just been reading an acct. of Mr Dease's obs on the wounds of the head (in the Critical Review) wherein he advises this method of dressing contused & lacerated wounds of the scalp. The accident happened before I had thought sufficiently on the subject – and I pursued an injudicious method in this case, to my no small mortification.'. Hey was a member of the Leeds Library in this year and may have accessed the journal from that library's collections. However he came across the review, when he treated another patient with a cranial injury shortly afterwards Hey had access to a physical copy of Dease's book and recorded in his case history 'Mr Dease Surgeon in Dublin had published a great number of cases, from which it appears, that no

¹⁹⁶ For John Murray's role in early medical publishing, see William Zachs, *The First John Murray and the Late Eighteenth-Century London Book Trade* (Oxford, Oxford University Press, 1998), p. 89, 308. Murray's catalogue was included in the 1784 catalogue of the medical library as item no. 27 under Pamphlets. *Medical Library at Leeds*, p. 20.

¹⁹⁷ 'Laymen, Doctors and Medical Knowledge in the Eighteenth Century: The Evidence of the *Gentleman's Magazine*', in *Patients and Practitioners: Lay Perceptions of Medicine in Pre-Industrial Society*, ed. by Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 282-314

¹⁹⁸ Edmund Dease, *Observations on Wounds of the Head* (1777); Book Review by Robinson: Edmund Dease, 'Observations on Wounds of the Head' in *The Critical review, or, Annals of literature*, 42, (London: R. Baldwin, October 1776), 289-293.

injury is likely to happen from delaying this operation till symptoms of injury done to the brain shall come on.’.¹⁹⁹

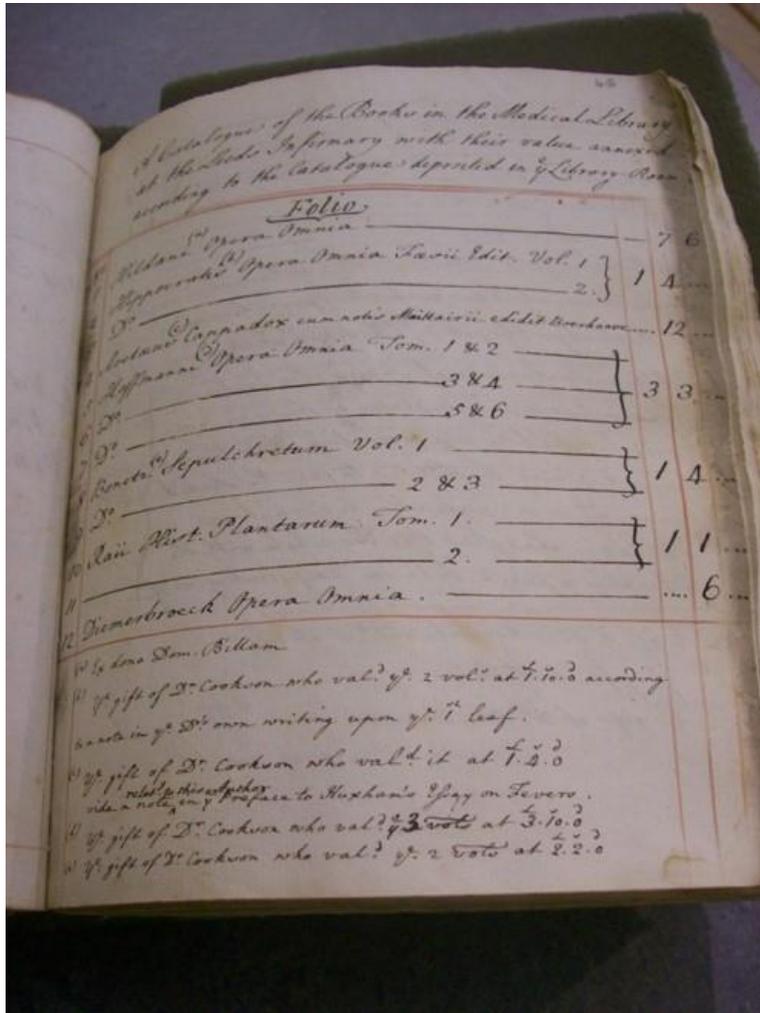
In 1784 the committee of the Medical Library took the step of producing a printed catalogue of its collections. The total collection of the library amounted to 324 titles, many of which were multi-volume works, making the total number of items among its collection rather more substantial than this figure might at first suggest. The size of this collection was in keeping with other medical libraries of the period. The Medical Library which had been founded by the Physicians of the Pennsylvania Hospital in 1763, had a collection of 528 books when its first catalogue was published in 1790.²⁰⁰ Only the Liverpool Medical Library seems to have acquired a collection numbering into the thousands in the eighteenth century – when its first catalogue was published in 1799 and after just twenty years of operation, its collection numbered an exceptional fourteen thousand volumes.²⁰¹

¹⁹⁹ Leeds, Brotherton Library MS 628/6 Case histories in medicine and surgery in the Leeds area, 1763-1809, Case 37, p. 161 and Case 40, p. 164-165.

²⁰⁰ *A Catalogue of the books belonging to the medical library at the General Infirmary at Hull* (Hull : J. & W. Rawson, 1790), and Gloria K Rosen, ‘Hospital Libraries and Collections’ in Allen Kent, Harold Lancour, Jay E. Daily (eds) *Encyclopedia of Library and Information Science: Volume 11*, (New York: Marcel Dekker, 1974), pp. 22-61, p. 23.

²⁰¹ *A Catalogue of the Books in the Medical Library at the Dispensary* (1799) listed in Florence and Moulton ‘Liverpool Medical Institution’, p. 36.

Figure 4.2: The Manuscript Catalogue of the Books in the Medical Library at the Leeds Infirmary (1784).



Source: Medical Commonplace-book, including a Catalogue of the Books in the Medical Library at the Leeds Infirmary. Manuscripts: MS 1587. Reproduced with the permission of Special Collections, Leeds University Library.

As well as providing the members of the library with details of the books in its collection, the publication of its catalogue in 1784 produced an additional and much welcome outcome for the Medical Library. The Catalogue served as a printed reminder of the benefit the library was to the infirmary and ultimately to the patients being treated within its walls, and it prompted the Trustees of the Infirmary to take a greater interest in the affairs of a library that came under their jurisdiction, in so much as they donated funds towards the purchase of new books. Immediately after the printed catalogue of the Medical Library's acquisitions was first circulated in Leeds, at a meeting

of the quarterly board of the trustees of the Infirmary on 7 January 1785, a discussion was had about the possibility of the Infirmary contributing some money to the medical library.²⁰² On 5 October 1785, after nearly ten months of intermittent discussion the Board of Trustees finally took the decision to donate five guineas toward the library 'for the purpose of buying medical Books under the Direction of the Faculty who attend the Infirmary':

It having been recommended to the annual Board by the Quarterly Board held the 30th March 1785 to give a Benefaction to the medical library belonging this House. The Board, after taking the same into Consideration Is of Opinion that the Knowledge to be attained from many New useful Publications on medical subjects, is clearly Connected with the Interest & advantage of this Charity, & as the present Library has been raised & supported entirely By private Contribution, tho: admitted to be the property Of the Infirmary. Ordered That the sum of Five Guineas be appropriated To the above purpose (viz. to the buying medical Books under The Direction of the Faculty who attend the Infirmary).²⁰³

The donation was repeated again in December the following year.²⁰⁴ This additional income was put to good use by the purchasing committee of the Medical Library, which consisted of William Hey and James Lucas (the Infirmary's two most prominent surgeons), and Dr Walker one of the Infirmary's honorary physicians.²⁰⁵

One of the purposes of the Medical Library was to acquire medical literature relevant to the professional needs of the town's medical practitioners, and the patients they treated. The Library, led by this purchasing committee, thus frequently purchased new medical publications, which often took the form of medical journals. Medical journals were among the earliest specialist periodicals of any sort and an important innovation meeting the same sort of need for current medical information as the

²⁰² WYL2295/1 Quarterly Board, p. 170 and p. 172.

²⁰³ *Ibid.*, p. 172.

²⁰⁴ On 27 December 1786 the Trustees donated another five guineas to the library. *Ibid.*, p. 177.

²⁰⁵ *Medical Library at Leeds*, p. 24.

Medical Library.²⁰⁶ The library for instance contained all five volumes of *Medical Observations and Inquiries*, the London-based journal of the Society of Physicians which operated between (c.1754-1757) and 1793 and which featured luminaries such as William Hunter and John Fothergill.²⁰⁷ Alongside *Medical Observations* other newly published medical periodicals featured particularly strongly in the collection such as the *Medical Magazine*.²⁰⁸ More important, however, is the promptness with which medical publications appeared in the library. Take *Medical Observations* for instance. The first four volumes of the periodical, which had been published at various intervals between 1758 and 1771, were entered into the library on 1 May 1772, suggesting a decision had been made to purchase these in that year. By the time the fifth and sixth volumes were entered into the library they were entering into circulation in the same year as their publication, and were therefore keeping up with the publication. Volume five which was published in 1776 was entered into the library on 11 September 1776, for instance while volume six was entered into the library on 10 August 1784, again the same year as it was published. This applied to other periodicals too, including *Medical Commentaries* and the *London Medical Journal*. Nor was it restricted purely to periodicals; the library was also purchasing books as they appeared in print. In May 1782 the library purchased a two volume octavo translation of Zimmerman's *A Treatise on Experience in Physic*, two months before the *Critical Review* reviewed it.²⁰⁹ Nor were these the only such examples. The second volume of William Cullen's *A Treatise on Materia Medica* (1789) entered into the library's collection by September 1790, and John Hunter's *A Treatise on*

²⁰⁶ See for instance, R. Porter, 'The Rise of Medical Journalism in Britain to 1800', in *Medical Journals and Medical Knowledge: Historical Essays*, ed. by W.F. Bynum, Stephen Lock and Roy Porter, (London: Routledge, 1992), pp. 6-28.

²⁰⁷ See the Scholarly Societies Project in association with the University of Waterloo on the Society of Physicians in London <http://www.scholarly-societies.org/history/1754spl.html>.

²⁰⁸ *The medical magazine or, General repository of practical physic and surgery* (London: G. Kearsley, 1774).

²⁰⁹ The two volumes were priced at 12s. Both volumes entered into circulation on 17 May 1782 and were borrowable for a period of 10 days. Zimmerman, *A Treatise on Experience in Physic* (London: Printed for G Wilkie, 1782); 'A Treatise on Experience in Physic', *Critical Review*, 54, (July 1782), 41-46.

the Inflammation of Gunshot Wounds (1794) on June 25 1794. Publications such as these gave the members access to the latest medical knowledge and confirm that the library was used for professional purposes.

One of the ways the Medical Library ensured it maintained access to, and could afford new publications going into the nineteenth century, was to join forces with New Subscription Library (f. 1793). Between 1805 and 1811 the Medical Library regularly ordered its books through the New Subscription Library, with the additional benefit that it kept the costs of expenditure on the transportation of books to a minimum. Throughout this period the Library maintained an active expenditure on new books, and the books entered into its collection were predominantly the latest publications as they appeared in print. On 18 July 1806 for instance, J & J Richardson booksellers and publishers in London billed the New Subscription Library £16.19s of which the Medical Library had spent a total of £6.17.11d. The Medical Library's purchases included Joseph Fox's *The History and Treatment of the Diseases of the Teeth and Gums* (1806), James Hamilton's *Observations on the Utility and Administration of Purgative Medicines in Several Diseases* (second edition 1806), Christopher Pemberton's *A Practical Treatise on Various Diseases of the Abdominal Viscera* (1806), John Abernethy's *Surgical Observations* (it is unclear if this refers to the first edition published in 1804, or the second edition published in 1806), John Burn's *Observations on Abortion* (1806), John Bell's *The Principles of Surgery* (published between 1801 and 1808) and Alexander Hamilton's *A Treatise on the Management of Female Complaints* (presumably the revised fifth edition published in 1804).

As already mentioned, the 1784 catalogue also included its laws and a list of its members. This catalogue, (the only one extant for the eighteenth century) was printed in Leeds and distributed to each of the twenty members of the library.²¹⁰ In this year, and throughout its history (understandably given that its collections were so strongly

²¹⁰ This is the first known catalogue of the medical library in existence. *Medical-Library at Leeds*.

geared towards medicine), the majority of the library's membership was drawn from members of the medical profession. In total seventeen of the twenty members in 1784 came from among the medical community in Leeds and its vicinity. We saw in chapter three how membership of the library in 1768 was largely confined to the honorary staff of the infirmary, and in turn, membership of the library remained popular among the staff of the Infirmary well into the eighteenth century. The three surgeons at the Infirmary, William Hey, James Lucas, Patrick Strother and two of its physicians James Crowther and Joshua Walker, subscribed to the library in 1784 – nearly the entirety of the faculty. The only exceptions were Robert Davison, one of the Infirmary's physicians, and James Peacocke the Infirmary's apothecary who was regardless involved in the library in his role as librarian (he had succeeded William Carr in 1781). Unlike in 1768, the Faculty of the Infirmary no longer formed the majority of the library's membership in 1784 and only contributed a quarter of the total number of subscribers of the library in this year. The collection of the library was very much geared towards this group of subscribers, and it was those members on the faculty of the Infirmary who most frequently borrowed books from its collection.²¹¹ It consisted of items relevant to the working needs of surgeons at the Infirmary. One of the new methods of treatment in the eighteenth century was the use of medical electricity which was used by many Georgian medical practitioners to overcome nervous conditions among other matters.²¹² It was a method used by practitioners in Leeds. As early as December 1769 the Trustees of the Infirmary ordered that William Hey procure an electrical machine from Joseph Priestley, and Hey put this treatment into use at the Infirmary.²¹³ James Peacocke, who was

²¹¹ This conclusion is based on the author's analysis of the extant borrowing records of the Medical Library for the year 1805. Leeds, Brotherton Library, MS 1591: Register of Circulation of the Library, 1802-1827.

²¹² Among many enthusiasts for this method of treatment was Erasmus Darwin. See Roy Porter and Dorothy Porter, *Patient's Progress: Doctors and Doctoring in Eighteenth-century England* (Oxford: Polity, 1989), p. 171.

²¹³ Priestley, had recently published *The History and Present State of Electricity* (1767), and built the electrical machines with his brother Timothy Priestley. WYL2295/1 Quarterly Board, p. 47.

apothecary at the Infirmary between 1781 and 1785 recalled how in one case Hey treated a patient with an eye complaint using the machine:

Eliz Smith Aged 37 was admitted a patient for a complaint in her Eyes: when admitted she was ordered to be Electrified to receive slight Shocks thro' the Head for a few minutes and a Stream of fire to be drawn on from the Eyes with a pointed needle, these means have been continued a Month during which time her Sight gradually increased, she is now able to read a Chapter in the Bible [...]²¹⁴

Unsurprisingly, given that the purpose of the library was to be an active working library works by medical men on the application and use of electricity featured among its collection. These included Richard Lovett's *The electrical fluid applied as a remedy to maladies and disorders incident to the human body* (an author well-lauded by Joseph Priestley in *The History and Present State of Electricity*); Tiberius Cavallo's *An essay on the theory and practice of medical electricity* (1781) and John Birch's *Considerations on the Efficacy of Electricity in Removing Female Obstructions*.²¹⁵

In addition to the staff of the Infirmary twelve other members of the medical profession in Leeds and its vicinity subscribed to the library in the year 1784. Membership was particularly popular among those engaged in the practice of surgery. Nine surgeon-apothecaries, six of whom practised in Leeds – the other three in the outlying towns of Otley, Rawdon and Bingley – were members. To these we can add a physician who resided in Pontefract, and two apothecaries both of whom were resident in Leeds.²¹⁶ Although they may not have been active members of the Faculty in 1784, many of these practitioners had prior links with the Infirmary, further highlighting its importance in the history of the Library, and the close-knit relationship between such practitioners and the Infirmary. The two apothecaries, David Joy and William Trant, had

²¹⁴ S.T. Anning, 'Medical Case Book: Leeds 1781-1784', *Medical History*, 28 (1984), 420-431, p. 425.

²¹⁵ Joseph Priestley, *The History and Present State of Electricity*, 2nd edn, (London: J. Dodsley, 1769), pp. 390-393.

²¹⁶ Thomas Jones resided in Bingley, 14 miles from Leeds, Mr Raistrick in Rawden, 4 miles from Leeds, and Patrick Dixon in Otley 11 miles from Leeds.

both previously been employed by the Infirmary. Trant was the Infirmary's first apothecary serving from its opening in August 1767 for three years until his resignation in August 1770, after which he established himself as a druggist in Leeds and frequently supplied drugs to the Infirmary; Joy was Trant's replacement at the Infirmary, a position he retained until March 1773.²¹⁷ Many of the surgeons likewise had close connections with the Infirmary. Thomas Jones, the surgeon from Bingley, for instance, had been one of the surgeons in the inaugural faculty of the Infirmary upon its opening in 1767, and held the position until 1783 when he had vacated his position to open a private practice in Bingley. Meanwhile Francis Billam, one of the six surgeons living and working in Leeds, had been senior-surgeon of the Infirmary from its opening in 1767, until his retirement in November 1773.

The other three members of the Medical Library in 1784 were non-medical men. Of these, only Gamaliel Lloyd Esq, an Anglican merchant, who had been Mayor for the year 1778-1779, had any known connection with the Infirmary - he had sat on the board of Trustees during this appointment.²¹⁸ The other two subscribers, Rev. William Sheepshanks (1740-1810) and Rev. Dr. Goodinge, had no apparent connections, which raises the question as to why they subscribed? Dr. Goodinge was headmaster of the Grammar School at Leeds between 1778 and 1790; his membership presumably originated from a want of educational resources in the philosophical arts and medicine, and a need for wider variety of books than was available in the collection of the Grammar School Library.²¹⁹ William Sheepshanks, L.L.D on the other hand was an Anglican minister and perpetual curate of St. Johns from 1783. His membership of the library probably originated from his close friendship with William Hird, M.D. who was physician at the Infirmary from its opening in 1767 until his death in 1782. Still, that

²¹⁷ Between April and September 1785 Trant was paid £8 1s. 0d. for drugs supplied to the Infirmary, which had risen £42 3s 3ld for drugs supplied in 1787. Anning, *General Infirmary*, p. 226.

²¹⁸ Lloyd was present at a General Quarterly Board of the Subscribers held 31 March 1779, WYL2295/1 Quarterly Board, p. 132.

²¹⁹ Goodinge was also a member of the Leeds Library and the Foreign Circulating Library, his reasons for membership of the latter were almost certainly the same as those for his membership of the medical library.

these men were members suggests an interest in medicine in Leeds which went beyond the purely professional, and which we might well relate to a growing interest in Leeds in philosophical pursuits. We saw in chapter two that a course of philosophical lectures had first been delivered in Leeds early in the eighteenth century, and by the 1780s interest had grown to such an extent that a philosophical society was established in the town.

The Philosophical Society in question was active in Leeds between the years 1783 and 1786. It was founded at an inaugural meeting held at the Leeds Library on 6 March 1783, and had between 25 and 30 members including William Hey the senior surgeon at the Infirmary and the Society's president in 1783; the engineer John Smeaton; Joseph Priestley (although then resident in Birmingham); and the above-mentioned Anglican minister William Sheepshanks, its Secretary.²²⁰ The philosophical society followed a similar format to the medical society in Leeds which was active in 1768 and from which the medical library originated; members presented papers to one another that they had researched in their private time. Sheepshanks presented at least one paper to the society 'On Deformities of the Human Fetus [sic]' which was read on 24 December 1783 – a joint collaboration with William Hey.²²¹ The two men shared a mutual interest in philosophical pursuits, and could again be found collaborating with one another in the early nineteenth century.²²² Sheepshank's interest in natural

²²⁰ Other members included William Wood, Minister of Mill Hill Chapel, Dr. William Hird, Rev Miles Atkinson and Gamaliel Lloyd, John Blayds a banker, and Col Smithson. Its apparatus were made by Mr Aspdin, a watch maker in the town. *LI*, 4 March 1783; *Leeds Mercury* 13 October 1832, p. 7, issue 3328; 'Original Essay: Intellectual Epochs of Leeds'. Some mention of the society is made in Musson and Robinson, *Science and Technology*, pp. 156-158.

²²¹ William Hey presented a total of ten papers to the society in the three years it was active in Leeds. For a full list of these papers see the account by William Hey Junior: Leeds, Brotherton Library, MS 504/1 'Medical Life' Part 1st 'A Few facts and observations relative to the professional life and character of Mr Hey' by William Hey, 18r-20r. The manuscripts of some of these papers are extant and held in special collections at the University of Leeds. See Leeds, Brotherton Library, MS 184: Papers by William Hey, F.R.S., and related material (1783-1784), and Leeds, Brotherton Library, MS 1975/1/217: Philosophical papers of William Hey. FRS, (1736 - 1819).

²²² In 1800, Hey presented a series of twelve anatomical lectures in Leeds to 'benefit the pupils of the Infirmary & of the Faculty of Leeds at large' and raise money for the Infirmary. Tickets cost 10s. 6d. and William Hey senior gave the lectures whilst his son, William Hey Junior performed

philosophy, explains why he was a member of the medical library. Membership of the medical library gave non-medical men such as Sheepshanks access to a library dedicated to the purchase of works of natural philosophy and medicine, enabling them to pursue their own personal interests in this area.

This analysis of the Medical Library in the late eighteenth century has shown us how integral the library was to the practice of medicine in Leeds. The collections and membership of the library in this late Georgian period, demonstrate the thirst in Leeds both from among the profession and outside its ranks, for new medical knowledge that could be put to use toward the treatment of patients. Nowhere was this more evident than among the Faculty of the Infirmary who benefited not only from the collections being housed at their workplace, but from the greatest say in its collections and operation. In chapter five we will consider further the impact that the reading of medical texts, and the development of medical publication, had on the practice of medicine in Georgian Leeds. But now, we turn to look at a library with limited collections in the field of medicine.

4.2 Leeds Circulating Library

Of all Leeds's libraries, the Leeds Library can best be associated with the scholarly argument that subscription libraries were associations of politeness and provincial sociability in Georgian society.²²³ The Library, as we saw in chapter three, was formed in Leeds in 1768 and advertised to potential subscribers on the basis that it would improve the civic image of Leeds. Within just a few months of opening it had attracted over one hundred subscribers largely drawn from the merchants, medics and ministers in the upper echelons of Leeds society. In this section, we explore the library's

the dissection on the corpse of a criminal executed at York for murder. There was just one exception to this arrangement. At the final lecture on the structure of the eye and the theory of vision to which ladies were admitted, he was joined by William Sheepshanks who 'gave the Philosophical part of the lecture on the eye'. Leeds, Brotherton Library, MS 504/2 'Medical Life of Mr Hey Part 2nd', 3r-6r.

²²³ Allan, 'Politeness', p. 159.

continued popularity in Leeds in the late Georgian period. We assess how the library met the needs of an ever-expanding membership which in 1813 was limited to 500 subscribers, and how its library committees managed the growing issues over space and access to the library involved in maintaining a collection of books that was to increase perpetually in size.²²⁴ In turn, we examine how the collection developed throughout the eighteenth century, and through an analysis of its published catalogues consider whether the pattern evident upon the publication of its first catalogue early in 1769 – that the collection consisted predominantly of polite literature – was maintained thereafter.

The library's early holdings reflect the varied interests of its socially diverse membership. The books in its collection were largely works of polite literature 'calculated for the Instruction and Entertainment of every Class of Reader'.²²⁵ Elaine Robinson classified some two-thirds of the books acquired by the Leeds Library between 1768 and 1817 as 'serious literature'.²²⁶ In 1778 the library's membership stood at 274 subscribers and its collection stood at nearly 2000 volumes, four times that in 1768. With 490 volumes, 'history, antiquities and biography' was by far the most popular subject in the library in 1778. 'Criticism, Polite Literature and Miscellanies' was the second most popular with 251 volumes, followed closely by 'prose, epics, romances and novels' (219 volumes), 'Geography, Voyages and Travels and Natural History' (215 volumes), and 'poetry and plays' (212 volumes). The strength of the holdings of the Leeds Library in these areas in the late eighteenth century conforms with wider trends. History was a core genre of all subscription library collections, and the overlapping fields of geography, travel, topography and natural history account for the majority of purchases made by subscription libraries in the late Georgian era.²²⁷ In Liverpool this was also the case; in 1761 three years after its foundation, 'Polite Literature, Poetry and Plays' formed the largest category with 171 titles, 'Pamphlets' was the second most

²²⁴ LI 9 August 1768, 'Proposal to form a Circulating Library Leeds August 1768'.

²²⁵ LI, 1771.

²²⁶ Robinson, 'Leeds Library', p. 63.

²²⁷ Allan, *Nation of Readers*, pp. 102-103.

popular with eighty-one, while history was third with fifty-four works.²²⁸ In terms of the sorts of books borrowed by library users, rather than just held by the library, these subjects also proved popular. At the Bristol Library the most popular category was 'History, Antiquity and Geography'; 283 titles were borrowed 6,121 times between 1773 and 1784.²²⁹ The category of belles-lettres (which consisted of 238 titles), was the second most popular with a total of 3,313 borrowings in this twelve-year period.²³⁰

Table 2: Subject Analysis of the Leeds Library Catalogue (1778)

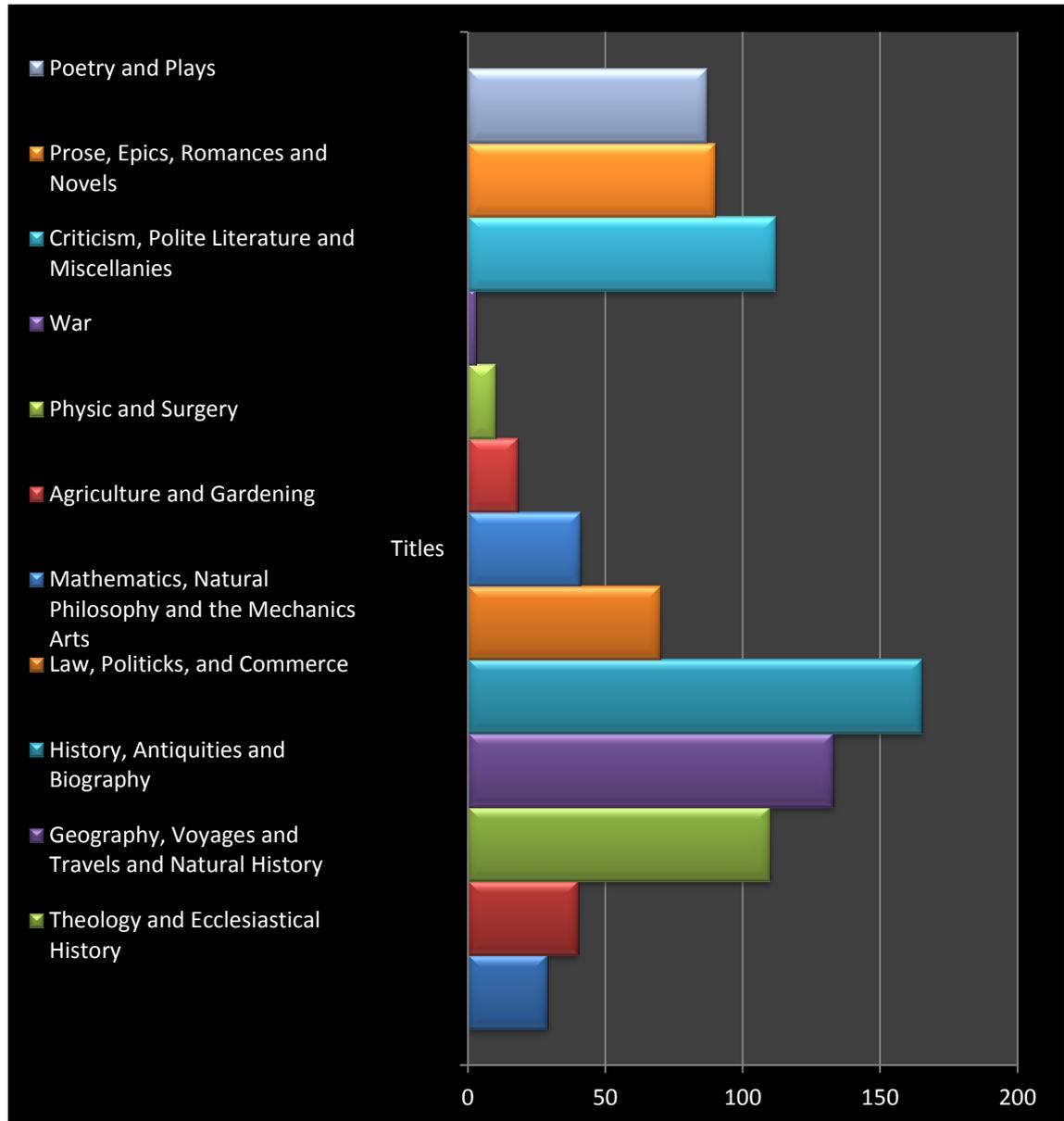
Subject	Titles	Volumes
General Knowledge, Education and Grammar	29	43
Metaphysics, Logic and Ethics	40	54
Theology and Ecclesiastical History	110	179
Geography, Voyages and Travels and Natural History	133	215
History, Antiquities and Biography	165	490
Law, Politicks, and Commerce	70	138
Mathematics, Natural Philosophy and the Mechanics Arts	41	66
Agriculture and Gardening	18	25
Physic and Surgery	10	10
War	3	3
Criticism, Polite Literature and Miscellanies	112	251
Prose, Epics, Romances and Novels	90	219
Poetry and Plays	87	212

²²⁸ Robinson, 'Leeds Library', p. 62.

²²⁹ Kaufman, *Libraries and their Users*, p. 31.

²³⁰ *Ibid.*, p. 31.

Figure 4.3: Subject Analysis of the Leeds Library Catalogue (1778)



Source: A Compleat Catalogue of the Books in the Circulating-Library at Leeds; A Copy of the Laws As they are now in Force; and a List of the Subscribers (Leeds: Printed by G. Wright & son, 1778).

The least numerous areas in the Leeds Library in 1778 were ‘agriculture and gardening’ at 25 volumes, ‘physic and surgery’ with 10 volumes, and the collection of books on war which contained just 3 volumes. The near-absence of books in physic and surgery in the collections of the Leeds Library can be explained by the existence of the Leeds Medical Library in Leeds, which, as we have established provided a collection of medical books relevant to the needs of medical men in the town. Indeed physic and surgery remained one of the least popular categories of books in the Leeds Library throughout the late Georgian period, and by 1817 the stock in this area amounted to only one per cent of the total collection of books in the library.²³¹

Figure 4.4: Percentages of Holdings by Subject in the Leeds Library Collections (1778-1817)

Subject Categories	Catalogues of the Leeds Library				
	1778	1782	1785	1809	1817
General Knowledge, Education and Grammar	3	3	2	2	2
Metaphysics, Logic and Ethics	4	4	3	2	2
Theology and Ecclesiastical History	13	11	9	9	9
Geography, Voyages, Travels and Natural History	16	16	14	15	17
History, Antiquities and Biography	18	19	15	15	15
Law, Politics and Commerce	7	8	13	16	16
Mathematics, Natural Philosophy and the Mechanic Arts	4	6	5	5	5
Agriculture and Gardening	2	2	2	2	2
Physic and Surgery	1	1	1	1	1
Criticism, Polite Literature and Miscellanies	12	12	11	10	10
Prose, Epics, Romances and Novels	10	9	7	4	5
Poetry and Plays	9	9	14	15	14
War	1	0			
Translations of Classics			2	2	1
Pamphlets			2	1	0
Maps				1	1

Source: Elaine Robinson, ‘The Leeds Library in 1817’, in *‘A Very Good Public Library’: Early Years of the Leeds Library*, ed. by Geoffrey Forster (Wylam: Allenholme Press, 2001), pp. 29-109.

²³¹ Robinson, ‘Leeds Library’, p. 62.

By 1790 the Leeds Library's collection stood at 4,500 volumes, and the collections in politics, in poetry and plays, and in science had all doubled in size.²³² Moreover in the early nineteenth century politics overtook history as the most popular collection in the library. Travel was the second most numerous subject, followed by history; poetry and plays, and theology.²³³

Table 3: Number of Volumes in the Collections of the Leeds Library (1768 to 1790)²³⁴

Year	Collection (Volumes)
1768	503
1769	600
1770	800
1771	1000
1772	1200
1775	1600
1776	1750
1777	2000
1779	2100
1780	2300
1790	4500

²³² Frank Beckwith, 'The Eighteenth-Century Proprietary Library in England', *Journal of Documentation*, 3 (1947), 81-98 (90).

²³³ *Ibid.*, p. 90

²³⁴ With the exception of the year 1768 figures given are estimates.

Table 4: Membership of the Leeds Library (1768-1827)²³⁵

Year	Membership
1768	105
1769	c.130
1778	274
1782	319
1785	375
1809	481
1827	485

In turn, the collections of the Leeds Library by this date reflect a wider shift in the collections of subscription libraries as these institutions began accumulating fiction.²³⁶ In the nineteenth century we can see the growing shift towards purchases of ‘modern’ works of fiction in the library’s collection. By 1818, novels by the female hand had come to be accepted in the Library; in this year Jane Austen’s *Northanger Abbey* was bought on its appearance in April, while the library’s collection also included works by Jane Porter, Susan Ferrier and Mrs Brunton.²³⁷ The growing presence of fiction in the library in the nineteenth century helps demonstrate that acquiring a collection for the purposes of instruction was less of a priority in this period, as members sought access to a library with collection designed for pleasure and amusement at its core. By 1817 such reading for constituted a large proportion of the works ordered by the library for its collection; ‘Criticism, Polite Learning and Miscellanies’, ‘Prose Epics, Novels and

²³⁵ With the exception of the year 1769 these figures are taken from the published catalogues of the Leeds Library.

²³⁶ On the trend for fiction in subscription libraries see Allan, *Nation of Readers*, pp. 104-106.

²³⁷ Beckwith, *The Leeds Library*, p. 32.

Romances' and 'Poetry and Plays' accounted for forty-three per cent of the works ordered by the Committee in this year.²³⁸

The cost of acquiring a collection of books such as that purchased by the Leeds Library was staggering. The acquisitions policy of the Leeds Library, like that of other subscription libraries, was one of high expenditure as it sought to create a permanent collection of books. In 1779 the library placed its expenditure on the collection to-date (which amounted to 2,100 volumes) at £800.²³⁹ During the first thirty-two years of its existence 81 per cent of the library's total expenditure of £4127 was on book purchases.²⁴⁰ By the nineteenth century the library was regularly spending over £100 per year on purchases, as illustrated by table 5 which shows the library's monthly expenditure on books in the year 1816.

Table 5: Leeds Library Expenditure on Books January-December 1816²⁴¹

January	£19 8s
February	£15 4s
March	£15 9s
April	£11 17s 4d
May	(Total Unknown)
June	£11 9s
July	£4 13s 6d
August	£26 8s 6d
September	£1 8s 0d
October	£39 17s 6d
November	£2 4s
December	£14 10s

²³⁸ Robinson 'Leeds Library', p. 59.

²³⁹ *LI*, 31 August 1779.

²⁴⁰ Geoffrey Forster, 'Introduction', in *'A Very Good Public Library': Early Years of the Leeds Library*, ed. by Geoffrey Forster (Wylam: Allenholme Press, 2001), pp. 5-27, (p. 10).

²⁴¹ Leeds, Leeds Library, Order Book of the Leeds Library 1811-1832, (1816).

The Leeds Library committee's expenditure on books varied from month to month. In September 1816 the committee spent just £1 8s on John Hobhouses's *The Substance of Some Letters written by an Englishman* (1816). By contrast the months of August and October saw a far greater expenditure with £26 8s 6d and £39 17s 6d respectively put towards new purchases for the library. Such a high level of expenditure one or two months of the year was not uncommon. In January 1813 £24 3s was spent on book purchases while in August 1814 £21 was put towards the cost of purchasing John Gottfried Haensel's *Letters on the Nicobar Islands* (1812), Joseph Berrington's *A Literary History of the Middle Ages* (1814), and Walter Paterson's *The Legends of Iona, and other Poems* (1814) among a number of other purchases.

The heavy cost associated with maintaining the collection of a subscription library by the nineteenth century was largely due to increases in the price of books. In the mid eighteenth century octavo or duodecimo works such as popular novels tended to be priced in the region of two to three shillings per volume, while more serious works of literature which were normally published in the quarto or folio format, cost in the region of ten-twelve shillings per volume. Inflation meant the cost of books increased by roughly threefold between 1750 and 1810. Thus in the early nineteenth century a novel published in duodecimo format would retail at a cost of five to six shillings per volume and books issued in quarto size at around two guineas per volume.²⁴² In response many subscription libraries raised their admission fees to compensate for the expenditure on book purchases and the Leeds Library was no exception.²⁴³ In 1768 admission to the library had cost one guinea for a share and an annual subscription of five shillings, with the annual subscription being put toward the cost of book purchases. By 1806 this had risen to seven guineas per share and an annual subscription of sixteen shillings,

²⁴² Allan, *A Nation of Readers*, p. 45; Raven, *Business of Books*, pp. 302-303.

²⁴³ It was not just the rise in retail prices that led libraries to increase their fees: the purported richness of the collection, the cost of maintaining buildings, and sponsorship of subscription publication also led libraries to raise their prices. Allan, *Nation*, pp. 93-94.

reflecting a general upward trend in the cost of subscription library membership in the early nineteenth century.²⁴⁴

Table 6: The cost of a Share and Annual Subscription Fee at the Leeds Library (1768 to c.1822)

Year	Cost of Share	Year	Cost of Annual Subscription
1768	£1 1s	1768	5s
1776	£1 11s	1798	7s
1786	£3 3s	1805	10s
1805	£4 4s	1806	16s
1806	£7 7s	1810	21s
1813	£10 10s	1818	25s
1821	£15 15s		
1822	£21		

In this particular year the annual cost of subscription rose by six shillings, while the cost of a share was increased by three guineas, although this steep hike in the cost of admission can be accounted for by the library committee's decision to purchase premises for the library in the summer of 1806. It was standard practice for subscription libraries to build their own premises, often on the grounds of the need for space. The Leeds Library had already been forced to move from its original premises in the back of

²⁴⁴ Ibid., p. 93.

Joseph Ogle's bookshop on Kirkgate due to lack of space. In 1781 it moved to the first floor of the rotation office on Kirkgate, and in 1808 it moved to its current premises on Commercial Street.

4.3 Foreign Circulating Library

In the year 1780, William Denison, a leading Leeds merchant, advertised for a new clerk. Among his criteria for would-be applicants was that they could write in French, German and Italian.²⁴⁵ Denison dealt almost exclusively in the Italian market, but the French, German and Italian languages combined formed the languages of commerce in the eighteenth century. Significantly, they were also the languages that formed the collection of the Foreign Circulating Library (est. 1778), the institution to which we now turn. It does not appear that Denison subscribed to the Foreign Library – with a fortune estimated at £700,000 at the time of his death in 1782 he could easily have afforded to purchase literature in the foreign languages without having recourse to join such an enterprise. Nonetheless, Denison demonstrates the importance which Leeds's merchants in the late Georgian period attached to a working knowledge of the continental languages.

The Foreign Library was founded in Leeds amidst debate about the importance of modern languages in the education of those with mercantile intent in later life. This debate centred upon the curriculum of the town's Grammar School and, as we saw in chapter three, raged on until Lord Eldon's ruling in 1805 that 'the Free School in Leeds is a Free Grammar School for teaching grammatically the learned languages according to Dr Johnson's definition'.²⁴⁶ Here, we examine the Library's history in the late eighteenth and early nineteenth centuries, focussing on its collections, on how it operated and on see how its membership developed. One of the key purposes of this discussion of the Foreign Library, is to assess the extent to which a collection based on the modern

²⁴⁵ R.G. Wilson *Gentleman Merchants*, p. 73.

²⁴⁶ See *From Bridge to Moor*, p. 43.

continental languages remained a professional need of Leeds's elite merchant body in the late Georgian period.

The Foreign Library's development was closely intertwined with that of the Leeds Library. We saw in chapter three that the membership of these institutions overlapped; in 1782 thirty-eight of the forty-four subscribers listed as subscribers of the Foreign Library also held shares in the Leeds Library.²⁴⁷ Further, their collections were maintained in the same premises (from 1782 in a room above the rotation office on Kirkgate), and by the same librarian, Mary Robinson. So too, when the Leeds Library published catalogues of its collections in the 1780s did the Foreign Library follow suit; its catalogues were attached to those issued by the Leeds Library in 1782 and 1785. Yet whereas the Leeds Library's catalogues identified contents in the collection by subject, the Foreign Library's catalogues only listed items in terms of size. This decision reflected the small scale of its collection and probably echoed the way the books were laid out in the library. In 1782 after four years of operation the library had just three folios, ten quartos, nineteen octavos, and fifty-one duodecimos; this amounted to a total collection of 83 titles or 280 volumes. Within three years the collection of the library had increased considerably to 121 titles in 1785.²⁴⁸

The collection in these early years predominantly contained works of history and travel. So too, did it contain, as Alice Hamilton has shown, a number of 'moralising sentimental works of fiction', including Mme de Genlis, Mme Cottin, August La Fontaine and C F Gellert. Likewise the collection contained works of contemporary romanticism, such as Raynouard's *Les Templiers* and La Curne de St Palaye's *memoires sur l'Ancienne*

²⁴⁷ It was resolved at a meeting of the committee of the Leeds Library on 5 September 1808 'That no Persons shall in future be admitted a Subscriber to the Foreign Library, who has not also a Ticket in the English one'. Minute Book, p. 18.

²⁴⁸ The folio section increased by 1 to 4 titles, the quartos by 1 to 11 titles, the octavos from 19 to 49 and the duodecimo section by six to 57 titles.

Chevalrie.²⁴⁹ The majority of the titles in the collection were French publications, although the library also contained a smattering of works published in German, Italian and Spanish. Given that the members of the library entered the books they wanted the library to purchase into a book kept in the library room, we can assume that the choice of languages in the library largely reflected the wishes of its forty-four subscribers. Their choices for which items to recommend to the library may have been influenced by the contents of the Leeds Library. The Leeds Library subscribed to all the popular magazines and reviews which contained entries on foreign literature – by the 1790s for instance the *Monthly Magazine* included lists of works imported by French booksellers in England, along with their prices.²⁵⁰ The library's committee, which consisted of twelve members who were elected annually each March, ultimately had the final say on the books which entered into the collection. The committee met at quarterly intervals each year and decided which books to purchase at these meetings, but how was this committee able to obtain works of foreign literature in Leeds, particularly given that the years 1792-1798 marked a substantial decline in the numbers of books imported into Britain from France?²⁵¹ In the mid eighteenth century London booksellers handled large volumes of new imported foreign literature, from the Netherlands, France, Italy and Germany; Raven shows that there emerged in the capital in this period a number of foreign dealers who advertised their prowess in obtaining continental literature, such as John Nourse who traded at the Strand between 1731 and 1780.²⁵² Thus rather than purchasing and importing books directly from the continent, we can surmise that (as with the Leeds Library's purchases), the Foreign Library's committee directed the librarian, Mary Robinson, who was herself a bookseller, to purchase the items on their behalf, and that she probably obtained these items from the London dealers in continental literature.

²⁴⁹ Substantial analysis of the categories is difficult given the nature of the catalogue. Only the 1811 catalogue is divided by language as well as size. For a reasonably comprehensive study of the collections of the Foreign Library see Hamilton, 'Foreign Circulating-Library', pp. 125-136.

²⁵⁰ This was included biannually. Topham, 'Science, Print and Crossing Borders', p. 320.

²⁵¹ *Ibid.*, p. 314.

²⁵² Raven, *Business of Books*, pp. 143-144.

Although the Foreign Library continued to share premises with the Leeds Library into the nineteenth century, moving with it to Commercial Street in 1808 for instance, it did not operate entirely within the Leeds Library's remit. This is best exemplified by the publication of two further catalogues of its collections in the years 1795 and 1811. Unlike the previous two catalogues which were attached to catalogues produced by the Leeds Library, these catalogues were published solely by the Foreign Library. In 1795 the library contained 203 titles and had nearly doubled in size in the space of ten years.²⁵³ A further 100 titles, the equivalent of 300 or so volumes had been added to the collection by 1811. This latter catalogue was catalogued by size, then by language – 'French', 'German and Dutch', and 'Italian, Spanish &c', and then alphabetically within these categories (whereas earlier ones were classified only by size). We can also gather some inkling of the popularity of the library in Leeds in this period through an analysis of these sources. By 1811 the library had seventy-eight members, an all-time high. Moreover, it had a higher income than ever before. In the eighteenth century the library charged subscribers a flat rate of five shillings per annum for membership of the library, in addition to this income, it gained half a guinea each time any new subscriber joined its ranks. But by 1811 the cost of membership had substantially increased. The cost of a share for new subscribers was one guinea, while annually the library could expect an income of seven shillings sixpence from each of its subscribers. This was a substantial outlay for members, given that they had to pay membership of the Leeds Library too (which by 1813 cost a hefty ten guineas per share and twenty-three shillings for the annual subscription). The higher expense associated with joining the Library at this time no doubt reflects the fact it was more expensive than ever to purchase new books from the continent. The continental and Napoleonic

²⁵³ In these ten years the library had only purchased one new folio 'Tableaux Topographiques, &c. de la Suisse, 2 tom'. Thirty-six of the titles purchased were quartos, 13 were octavos, and, 32 were duodecimos.

Wars contributed to the higher costs of purchasing continental literature, causing as they did increases in the cost of paper manufacture in France and higher labour costs.²⁵⁴

In the years the Foreign Library operated in Leeds the town underwent a radical social transformation that saw its population double from c.30,000 in 1775 to c.63,000 by 1811. The mercantile community of Leeds who provided its core membership underwent a vital transformation, with a number of leading figures transcending their mercantile origins and investing in industry and manufacture: a process that would forever change the face of Leeds. The membership of the library in these years reflects the latter shift. Among the subscribers were merchants-turned-manufacturers like John Marshall, a flax spinner who had joined the Library by 1785 (and whose reading habits we shall go onto look at in more detail in chapter six), Thomas Benyon (also joined in 1785) who went onto become a partner of Marshall, and by 1795 William Gatliff, a merchant based on Woodhouse Lane who later became a cotton manufacturer.²⁵⁵ By 1811 the Library's membership also included some of the newer occupations in the town; among the subscribers were a paper-stainer, timber-merchant and a soap-boiler.

The development of the Foreign Library's holdings reflected the gradual shift in Leeds's society towards a community of merchant-manufacturers. There are examples in the Library's stock which suggest that commercial and particularly manufacturing interests impacted on at least some of the books purchased in the Foreign Library from relatively early on in its existence. Peter Morrish has argued that the subscribers of the Foreign Library had an (undocumented) rule to purchase works on commercial German and there are a few examples of this in the library's collection.²⁵⁶ In 1785 the library had

²⁵⁴ 'During the war with France, the high price of labour and the increased cost of rags for paper manufacture, combined with the continued conservatism of the book trade, meant that new books were more expensive than ever before.' Jonathan R. Topham, 'Scientific and Medical Books 1780-1830', in *The Cambridge History of the Book in Britain, Volume V 1695-1830* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), p. 831.

²⁵⁵ See Hamilton 'A Very Good Public Library', p.154.

²⁵⁶ Peter Morrish, 'Foreign-language books in some Yorkshire Subscription Libraries, 1785-1805', *Yorkshire Archaeological Journal* 53 (1981), 79-92.

acquired Friedrich Wilhelm Taube's work on manufacturing, *Abschilderung der Engländischen Manufacturen*, and from 1795 works suited to those in manufacturing and the new trades were evident in the growing collections of the Foreign Library. In 1795, Johann Beckmann's guide to technology and manufacturing *Beiträge zur Ökonomie, Technologie, Polizei- und, Kameralwissenschaft* had also been added to the collection.²⁵⁷ By 1811 the library had also obtained J Peuchet's *Dictionnaire universal de la géographie commercante* (1799-1800), which contained reports relevant to the situation and extent of Merchants, Agriculture, Trade, Manufactures and the Laws, Uses, Courts and Administration of Trade, to navigation, banks, trading companies, weights, measures and coins, the export and import trade.

A further, though related spur to the Foreign Library was the development of interest in scientific literature in Leeds. In this chapter thus far, we have already discussed the formation of a philosophical society in Leeds in 1783 and seen that a growing interest in philosophy and science in Leeds explains why non-medical men were part of the Medical Library's ranks. Likewise, we have examined the small but substantial scientific collection of the Leeds Library which was acquired from its outset for those with a gentlemanly interest in science, and, which was due in no small part to Joseph Priestley's influence on Leeds in that period. In the late eighteenth century awareness of the continental languages was an absolute necessity for anyone interested in science. Priestley himself acknowledged this in the preface to the second edition of his *History and Present State of Electricity* (1769).

Latin is a language with which persons of a philosophical turn of mind have seldom leisure to make themselves so much matters of, as to write it with that elegance which the taste of the age requires. Besides books written in Latin are but little read, at least, in England; and therefore could have no sale with us. These circumstances make it the more necessary, that there should be, in every country, persons possessed of a competent knowledge of foreign languages, who

²⁵⁷ F.W. Taube, *Historische und Politische Abschilderung der Engländischen Manufacturen, Handlung, Schiffahrt, und Colonien nach ihrer jetzigen Einrichtung und Beschaffenheit* (Vienna, 1774); J. Beckmann, *Beiträge zur Ökonomie, Technologie, Polizei- und, Kameralwissenschaft* (Göttingen, 1777-1791).

should be attentive to the progress of science abroad, and communicate to their countrymen all useful discoveries as they are made.²⁵⁸

Many of the major 'scientific' discoveries were coming out of the continent in this period and thus a knowledge of the modern foreign languages was a necessity for anyone with interests in science. In this respect, and regardless of what works it contained, the Foreign Library served a useful purpose in Leeds for any members with interests in science as it provided the means by which they could acquaint themselves with works in the continental languages. In addition, the Foreign Library's collections, like those of the Medical Library and the Leeds Library, came to reflect the growing interest in science in Leeds society and provided a means by which members could access new works of science. Chemistry for instance was reasonably well represented in the Foreign Library's collections, as it was in those of the English Library. The Library held two volumes of Sage's *Elemens' de Mineralogie*, his *Memoires de Chymie*, four volumes of de Luc's *Recherches sur les Modifications de L'Atmosphere* (1784) and a French translation (from the German original) of Meyer's *Essai sur la Chemie*.²⁵⁹ Natural history was yet more popular and covered researches in French, German and Spanish. The collection included general works such as Blumenbach's *Naturgeschichte*, and Soulavie's *Historie Naturelle de la France Meridionale* and the Spanish *Introduccion a la Historia Natural* as well as works for the specialist reader by Linnaeus, Buffon and Lamarck. At least one Foreign Library subscriber was an active botanist – Richard Antony Salisbury, one of the founder members of the Horticultural Society of London, but the strength of the collection surely evidences more than a passing interest in this area among the other subscribers.²⁶⁰

²⁵⁸ Joseph Priestley, *The History and Present State of Electricity*, Second edition, (London: J. Dodsley, 1769), pp. xxii-xxiii.

²⁵⁹ *A catalogue of the books, in the foreign circulating-Library, at Leeds: with a list of subscribers* (Leeds: printed by Thomas Gill, 1795).

²⁶⁰ Richard Antony Salisbury (formerly Markham, 1761-1829) had joined the Library by 1795. Salisbury was a wealthy botanist, who studied at Edinburgh (although failed to get a degree) and redesigned the grounds at Harewood House. He counted Joseph Banks among his friends, was elected to the Royal Society in 1787, was a member of the Linnaean Society, and in 1796 published at his own expense a comprehensive list of the plants to be found on his estate (*Prodromus stirpium in horto ad Chapel Allerton vigentium*). He was later to become a divisive

The Foreign Library's policy of acquiring works on manufacturing and the sciences, was especially evident in its decision to purchase *Encyclopédie Méthodique*.²⁶¹ Pancoucke's *Encyclopédie Méthodique* was a reworking of D'Alembert's and Diderot's *Encyclopédie* and the *Supplément*. Published in quarto volumes for ease of handling by the reader (unlike the folio volumes of its predecessors) the *Méthodique* was intended to be a comprehensive subject guide, a 'book of knowledge for specific information' containing original research and writing that contributed to progress in the fields its volumes covered.²⁶² These comprised Mathematics and Physics; Medicine, Anatomy and Chemistry; Agriculture and the Natural Sciences, History and Geography; Theology, Philosophy, Grammar and Literature; Law and Political Economy; The Military Arts; The Fine Arts, Architecture and Music; and, the Mechanical Arts. Knowledge in these series came at a hefty price tag. The initial 1781 prospectus advertised that publication of the *Méthodique* would be complete by the year 1787, and would consist of fifty-three quarto volumes of text, plus seven plates at a cost of 672 *livres* (£50.7s.6d) with any additional volumes priced at 6 *livres* (9 shillings) each, but the eventual number of volumes was three times that number and it was September 1832 before the final instalments were completed.²⁶³ The Foreign Library had purchased 88 volumes of the *Méthodique* in thirty separate series by the time its third catalogue was published in 1795.²⁶⁴ By 1811 when its final catalogue appeared, the library had acquired an up-to-date collection of the *Méthodique* which numbered 130 volumes in thirty-eight separate

figure, more well known for his 'waspish relations with [Robert] Brown and the Smithians', than his work in botany. For more information, see D. E. Allen, 'Salisbury, Richard Anthony (1761–1829)', *ODNB*, [<http://www.oxforddnb.com/wam.leeds.ac.uk/view/article/24542>, accessed 12 Feb 2014].

²⁶¹ In 1981 P. S. Morrish recorded that the *L'Encyclopédie Méthodique* had migrated from the Leeds Library to the Brotherton Library, University of Leeds. Morrish, 'Foreign-language books', p. 81.

²⁶² Kathleen Hardesty Doig, *From Encyclopedie to Encyclopédie Méthodique: revision and expansion*, (Oxford : Voltaire Foundation, 2013), p. 280.

²⁶³ Historical currency converter: <http://www.pierre-marteau.com/currency/converter/eng-fra.html>. By the time publication was eventually completed forty-three separate series had appeared in print, amounting to a total of 177 volumes and 26 volumes of plates. Doig, *Encyclopédie Méthodique*, pp. 2, 6-7.

²⁶⁴ *Foreign circulating-Library* (1795), pp. 4-5.

series.²⁶⁵ Although no borrowers' ledgers survive for the Foreign Library, we can infer from the number of its volumes missing from the shelves of the library in April 1795 when the collection was examined (ten out of 88 volumes were on loan to members) that the *Méthodique* was a popular item in the library's collection. The specific items on loan also indicate the sorts of works that were popular with the subscribers. In April 1795, two of the three volumes entered into the library in the series 'Manufactures' were out on loan to the library's subscribers.²⁶⁶

The growing interest in the sciences in Leeds in the late eighteenth century is also evidenced by some of the items absent from the library room in April 1795. The series on botany and natural history were recognised in the eighteenth century as containing major new contributions to their respective fields of enquiry.²⁶⁷ The volumes in these series were among some of the most popular volumes of the *Méthodique* in the Foreign Library. The first volume 'Histoire Naturelle. L'Homme, les animaux quadrypedes et les cetaces' (1782) of the six volumes in the series 'Histoire Naturelle', edited by Buffon, and all three volumes in the series 'Botanique', published between 1783 and 1789-[1792] and edited by Lamarck, were out on loan to subscribers.²⁶⁸ It is once again apparent that the collections of the Foreign Library reflected its members' growing interest in manufacturing, science and industry, and it is a connection that we will explore further in chapter six of this thesis.

²⁶⁵ *Compleat Catalogue* (1811), pp. 12-15. Doig estimates that 130 complete volumes of the *Methodique* had appeared in print by the time its editor Agasse (Pancoucke had sold the franchise to his son-in-law Henri Agasse in 1794) died in 1813. Doig, *Encyclopédie Méthodique*, p. 7.

²⁶⁶ *Foreign circulating-Library* (1795).

²⁶⁷ Doig, *Encyclopédie Méthodique*, p. 276.

²⁶⁸ Other volumes of the *Methodique* missing from the library room included the two volumes owned by the library in the series 'theology' and the second of three volumes in the series 'Art Militaire' which included information about military tactics. Given that England was at war with France in this year and that the leader of the Leeds Volunteers since 1794, Thomas Lloyd subscribed to the library ('Colonel Lloyd' as he appeared in the list of subscribers), it is plausible that he was the borrower of this work.

Yet the Foreign Library, went into decline in the second decade of the nineteenth century. Its demise coincided with a decline in its working relationship with the Leeds Library. We saw earlier in this chapter that when the Leeds Library moved to its new premises on Commercial Street in 1808 the Foreign Library was allowed to move with it, but this was on two conditions agreed at the general meeting of the Leeds Library subscribers on 5 September 1808:

That the Books belonging to the Subscribers to the Foreign Library shall be admitted into the Library room upon the following conditions.

1st That the Subscribers do pay 4 Guineas per Annum to the Librarian for Attendance.

2ndly That no Persons shall in future be admitted a Subscriber to the Foreign Library, who has not also a Ticket in the English one.²⁶⁹

This agreement only lasted for five years. At the annual general meeting in June 1813 the committee of the Leeds Library resolved that ‘the Proprietors of the Foreign Library be requested to find some other room for the Foreign Books’.²⁷⁰ It is likely that financial difficulties at the Leeds Library contributed to this decision. In this period, the Leeds Library was struggling to pay back the £50 shares to its members, through which it had built the Commercial Street premises. The long-serving librarian Mary Robinson, who had served as librarian both to the Leeds Library and the Foreign Library, died in 1813 and was replaced by her daughter Miss Mary Robinson at this same meeting. It is possible that Mary junior refused to take on the responsibility of overseeing two separate libraries.²⁷¹ Whatever the cause, the cost of hiring a room and providing its own librarian to manage the collection was considered too much of an expense by the committee and members of the Foreign Library and the decision was taken to offer the foreign library collection to the Leeds library on the proviso that £20 per annum would be put toward the cost of purchasing foreign books in future. At the Annual General Meeting of the Leeds Library on 6 June 1814, this was agreed to and shelves were

²⁶⁹ Minute Book 1800-1879, p. 18.

²⁷⁰ Entry for June 1813 in Order Book of the Leeds Library.

²⁷¹ This was agreed at the Annual General Meeting held in June 1813. Minute Book 1800-1879, p. 24.

erected in the reading room in June 1814 to house the collection of the Foreign Library.²⁷² This spelt the end of the debate about the need to purchase books in the modern languages in Leeds which had originally initiated the Foreign Library's institution in Leeds in 1778.

The last we hear of the Foreign Library is an entry in the Minute Books of the Leeds Library in 1833.

Figure 4.5: Vote on the purchase of Foreign Language Books at the Annual General Meeting of the Leeds Library, June 1833²⁷³

At an Annual General Meeting of the Leeds Library on 3 June 1833, the following matter concerning the Foreign Library was debated: 'Whereas it appears from a recent order that the Committee considers works in the learned Languages admissible into the foreign department of this Library, it is submitted to the General Meeting, that the Foreign Library was founded solely for Works in the Modern European Languages it is Therefore: proposed, that the general Meeting resolve, That no Books in the learned Languages shall henceforth be admitted into this Library And it having been decided that it was not the Proposition of a New Rule but merely a declaration of the existing state of the Rules to be decided by a simple Majority. The Proposition was Balloted for and negatived. Ayes 32 Noes 65.

In this year, there was consternation among some of the former members of the Foreign Library about the introduction of classical languages into the former collection of books of the Foreign Library that was now housed in the Leeds Library. A ballot was put forward at the annual general meeting of the Library on 3 June 1833 'That no Books in the learned Languages shall henceforth be admitted into this Library'. The vote was lost 32-65 in favour of the admittance of the learned languages into the foreign department. After all these years, the Foreign Library had failed in its purpose to provide a collection of books in Leeds 'solely for Works in the Modern European Languages'.

²⁷² The minute book entry reads '2nd That the offer of the Foreign Library, on Condition that not less than twenty pounds a year shall be laid out in the purchase of Foreign Books, be accepted'. Minute Book 1800-1879, p. 25. See also the entry in the Leeds Library Order Book for June 1814 which states that: 'Shelves erected in the Reading Room for the Books of the Foreign Library'. Order Book 1811-1832.

²⁷³ Minute Book 1800-1879, pp. 49-50.

The story of the Foreign Library demonstrates the important role that foreign literature played in Leeds in the late Georgian period. The Library clearly fulfilled the various needs of Leeds's mercantile class by providing a space where they could enjoy the sorts of foreign literature which were lacking in the Leeds Library. However, its design went further than this. It provided the means by which the town's merchants could continue their education and improve their knowledge of the continental languages. The Library not only met the merchants' pleasurable interests but also enabled them to maintain their position of dominance in international trade.

4.4 New Subscription Library

When we first encountered the New Subscription Library in chapter three we noted that its establishment originated in amongst a group of breakaway subscribers of the Leeds Library subscribers, who sought greater control over the library's affairs. In this section we ask to what extent the Old Library (the Leeds Library) continued to influence the functioning of the New Subscription Library. We consider whether factors such as overcrowding and a lack of access to books in the Leeds Library continue affecting the New Subscription Library's purchasing choices. In turn, we assess whether it succeeded in limiting its collection to 'books of every variety and taste excepting those injurious to good morals'²⁷⁴. In turn we explore the extent to which the library catered for the professional interests of a group of subscribers who were largely engaged in trade and manufacturing. This raises questions about the nature of its collections - did the useful arts, science, trade and manufacturing form the core of its collections rather than history, geography or travels? Moreover in the context of constant warfare and uncertainty in trade, did the library have a peculiarly political emphasis, and were works of American politics favoured in the collection? Let us now turn to discuss how the New Subscription Library functioned beyond February 1793 and the demands of that core group of thirty founding members.

²⁷⁴ Proposal, 1793.

The New Library was not limited to thirty subscribers for long. In spite of a rule stating that the support of two-thirds of the subscribers would be necessary before any further members were appointed, the membership readily increased to 100 subscribers (the maximum number allowed under the 1793 proposal). How quickly this increase occurred is unclear given that limited records survive for the Library, yet by 1805 and the publishing of (what appears to be its first) catalogue, the Library had 100 subscribers. This figure was repeated in the subsequent list of members attached to the issuing of its 1811 catalogue. In spite of these increases, the make-up of the membership itself largely reflected those same occupations that had joined in 1793. Merchant-manufacturers continued to predominate among the subscribers. Indeed in 1805 17 original members still retained their shares, a figure which had been reduced to 14 by 1811. For much of its existence, the Library retained its rented premises on Albion Street, Leeds close to the merchant houses on Park Row. But sometime in the mid-1820s it moved East one street, to 33 Park Row.²⁷⁵ The move may well have coincided with the recently established Philosophical and Literary Society's decision to establish permanent premises a few doors away in Park Row. Certainly there was a large crossover in membership with the members of the Philosophical Society, while many library subscribers continued to live nearby in Park Place.²⁷⁶ The Library retained these premises until at least 1843 but at some time between that date and 1863 it moved again, northwards to Cookridge Street. This was a shrewd step by the proprietors: the area was one of civic investment and near to new civic building schemes such as Leeds Town Hall, designed by Cuthbert Broderick and built in Leeds between 1853 and 1858.

Unlike the Leeds Library, which was run by three successive generations of librarians from the same family, the New Library frequently employed different

²⁷⁵ W. Parson, *General and Commercial Directory of Leeds* (1826).

²⁷⁶ Select examples include Fountaine Brown and Frederick Oates. Josiah Oates, T.W. Stansfield and John Blayds both lived in Park Lane, while Samuel Birchall in Park Square. See Edward Baines, *Directory, general and commercial, of the town & borough of Leeds, for 1817, containing an alphabetical list of the merchants, manufacturers, tradesmen, and inhabitants (Leeds: Baines, 1817)*. For further information about merchant dwellings, see M. Beresford, *East End, West End*.

librarians to manage its affairs, although all appear to have been women. Mrs Evans was librarian in 1809, Mrs Cordingley in 1817. By 1822 the librarian was a Mrs Mary Prince (Baines 1822 Directory) and by 1826 this position had been taken over by a Miss E Coats (Parsons 1826 Directory). In 1830, a new librarian, Mrs Ann E. Beggs, is listed in Parson and Whites Directory. In 1839 this role had been taken over by Miss Delafare (Baines and Newsome 1839 Directory) and finally a Miss Hannah Megson acted as Librarian between 1849 and 1866, overseeing the move to 5 Cookridge Street. Yet whereas the Leeds Library purchased its books directly from the Robinsons who combined librarian duties with bookselling, the Librarians at the New Library, appear to have carried out only normal Librarian duties. Instead the New Library ordered books directly London, often combining forces with other institutions to reduce the cost of purchasing books in a century when many publishers were choosing to establish journals rather than publish new books due to the high costs involved in such enterprise.²⁷⁷

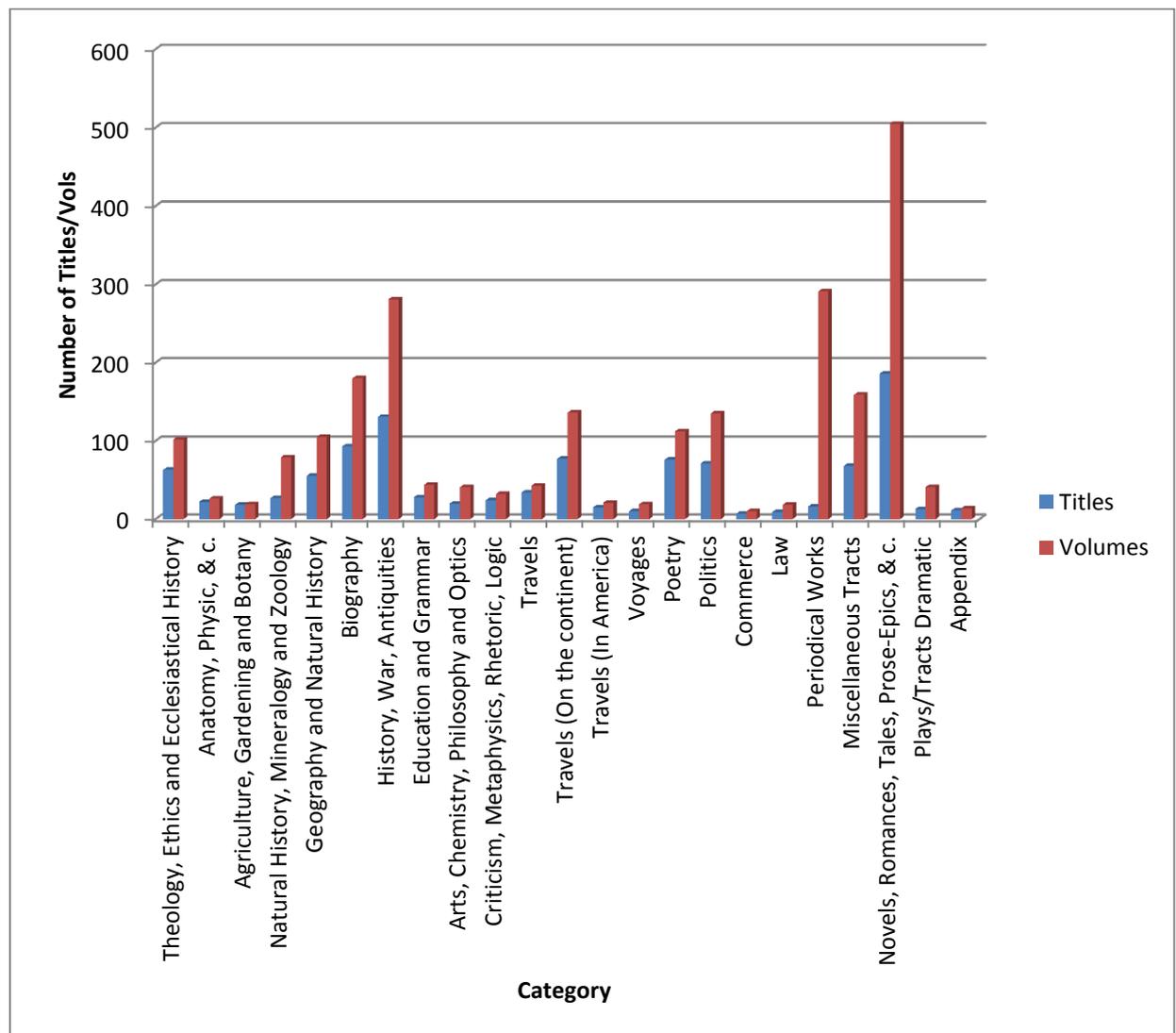
The New Library frequently cooperated with the Medical Library when purchasing books. Various bills and receipts for the New Subscription Library dating between 1806 and 1811 survive in the Lupton family collection in the Brotherton Library, Leeds (directly reflecting the period in which Arthur Lupton was treasurer of the New Library). While Lupton probably retained such receipts for housekeeping purposes, their survival may well also be due to the laws of the New Library which stated that it was the Treasurer who was ultimately responsible for deciding which books would be purchased by the Library.²⁷⁸ This differed from the Leeds Library where the President was ultimately responsible and, presumably, was decided as a better course of action by the New Library founders for reasons of convenience when maintaining the budget. Yet it is likely that the informal contract between the New Library and the Medical Library began

²⁷⁷ On the development of mass periodical production and circulation in the late eighteenth and early nineteenth centuries, see D. Finkelstein, 'Periodicals, Encyclopaedias and Nineteenth-Century Literary Production', in *The Edinburgh History of Scottish Literature volume II: Enlightenment, Britain and Empire (1707-1918)*, ed. by Susan Manning et al, (Edinburgh: Edinburgh University Press, 2007), pp. 198-210.

²⁷⁸ 1793 Proposal.

prior to (and continued beyond) those years for which the transactions are available in the Lupton papers. Given that the Libraries were purchasing directly from booksellers in London, the decision to purchase books jointly likely arose out of a mutual desire to reduce the costs associated with transportation.

Figure 4.6: Analysis of the Subject Categories in the New Subscription Library (1811)



Source: A Catalogue of Books in the New Subscription Library in Albion Street, Leeds (Leeds: Printed by Edward Baines, 1811).

The expansion of the collections of the New Subscription Library up to 1811 reflected the Library's need to build a collection to rival that of the Leeds Library, and to maintain the interest of a group of subscribers who had various other interests, financial burdens and commitments beyond membership to its walls. While they might not have had immediate ready access to the books it purchased at other institutions such as the Leeds Library, bearing in mind the overlap in membership, its subscribers could always fall back on the Leeds Library to supply any books they could not afford as individuals, especially from 1808 when that Library was successful enough to have warranted building its own premises. The 1811 catalogue evinces a collection dominated by the subject areas 'Biography', 'History, War and Antiquities', and 'Travel and Voyages', which were also the most popular subjects in those catalogues issued by the Leeds Library. The most popular subject category by far in the New Library, was 'novels, romances, talks, prose and epics', suggesting a collection of books designed for the preferences of those subscribers who engaged in the occasional leisurely fictional read. The circulation of polite literature at the New Library was certainly in keeping with the views espoused by the thirty founding members in 1793 that they wanted a collection of 'books of every variety of taste excepting those injurious to good morals'.²⁷⁹ What the collections of the New Subscription do evidence however, is the growing importance of manufacturing and industry in Leeds. The New Library had a section dedicated to 'Arts, Chemistry, Philosophy and Optics', featuring educational works such as an octavo edition of Olinthus Gregory's *Treatise on Mechanics* (1806) and James Wood's *Elements of Optics*.²⁸⁰ Its collection reflects a learned body of subscribers with far-reaching interests, particularly in industry and the arts.

²⁷⁹A *Catalogue of Books in the New Subscription Library in Albion Street, Leeds* (Leeds, 1811); Proposal for the New Subscription Library 13 February 1793.

²⁸⁰O. Gregory's *A Treatise of Mechanics: Theoretical, Practical and descriptive* (London: Printed for G. Kearsley, 1806) was written for use at the Royal Military Academy; and J. Wood's *The elements of optics: designed for the use of students in the university* (Cambridge: Printed by J. Burges, 1801) was used in teaching at the University of Cambridge.

4.5 Conclusion

This chapter has illuminated the different motivations at play in the ongoing development of the collections of the Leeds subscription libraries. In the first section we saw how the medical library's holdings were those of a working library and contained a modern collection of medical literature suited to those working in the field of medicine, as well as those with wider interests in natural philosophy. The collections of the Leeds Library, in turn, reflect wider reading trends in the eighteenth century and reflect the polite learning and leisurely interests of a wide body of subscribers that included women, as well as those engaged in the professions. The Foreign Library, by contrast, provided specialist knowledge. Its collections were dominated by works of useful knowledge, and it developed a strong collection of scientific matter which reflected the professional interests of its subscribers who came from the manufacturing trades. Finally the New Subscription Library demonstrates an institution with collections suited to the immediate needs of its select body of subscribers, including the practical needs of its subscribers who were largely drawn from among the mercantile and manufacturing communities.

PART III
READERS

Chapter 5

Knowledge and Professionalisation: Absorbing and Communicating Medical Knowledge in eighteenth-century Leeds

Throughout this thesis I have discussed the important role medical men and the medical profession played in the foundation and development of Leeds's subscription libraries, not least in their own library, the Medical Library which was founded in the town in 1768. In this chapter, the first of two chapters examining the reading habits of professional men in Leeds, we move away from a study of subscription library provision in the town to examine medical men as the consumers and readers of printed medical matter in the eighteenth century. Generally it is not the reading habits of medics that has interested historians of medicine but rather that of ordinary patients with their interest in the 'vernacular' medical literature of the day such as Buchan's *Domestic Medicine*.²⁸¹ When the literary interests of medical men in the eighteenth century are discussed, it is usually in relation to their interest in ornamental literature, and their attempts to pursue a polite and gentlemanly status in society.²⁸² I will argue in this chapter that medical books and periodicals were important for medical men in provincial towns; that medical men were the prime consumers of printed medical matter in the late eighteenth century; that medical men increasingly came to rely on medical literature in their training and in their formal years of practise.

This chapter focuses on the reading habits of the surgeons and apothecaries of eighteenth-century Leeds. It was they who dominated the numbers of the local faculty in the late Georgian era. In 1783 when Simmons published his *Medical Register* the

²⁸¹ For a study of Buchan's *Domestic Medicine*, see Charles E. Rosenberg, 'Medical Text and Social Context: William Buchan's *Domestic Medicine*', *Bulletin of the History of Medicine* 57 (1983), 22-42.

²⁸² See for instance the discussion in chapter two of Michael Brown's study of medicine in late-Georgian York entitled 'Polite and Ornamental Knowledge: medicine and the world of letters'. Brown, *Performing Medicine*, pp.48-81.

majority (82.3%) of medical men listed in the *Register* for Yorkshire were ‘surgeon-apothecaries’. Moreover, as we saw in chapters three and four, it was surgeon-apothecaries who dominated the membership of the Infirmary Medical Library in Leeds throughout the eighteenth and nineteenth centuries, and who could frequently be found borrowing books from the library. Throughout the chapter I use source material ranging from private ledgers, case studies and diaries, to printed publications to recreate the reading habits of Leeds’s medical faculty. Firstly I examine the extent to which William Hey, the long-serving surgeon of the Leeds Infirmary, had access to and was reading medical material in the eighteenth century. I then compare Hey’s habits with those of another surgeon in Leeds, James Lucas who was likewise surgeon of the Infirmary from its outset in 1767. Lastly I turn to look at the reading habits of apothecaries, the least well studied of the eighteenth-century medical practitioners. Analysis of the Carr family records evidences that apothecaries also increasingly became consumers of medical literature in the eighteenth century and actively participated in the wider changes and professional improvements in eighteenth-century medicine.

5.1 William Hey (1733-1819): Background and Medical Training

This assessment of the availability of new medical knowledge in eighteenth-century Leeds begins with the best-known of Leeds’s eighteenth-century medics, William Hey (1736-1819).²⁸³ In popular local history William Hey is a controversial figure, known for being surgeon at the Infirmary but equally recognised as a Methodist who was burnt in effigy by Leeds’s townspeople: in 1787 Hey was elected mayor of the town but so severely denounced vice in the town that his carriage was attacked.²⁸⁴ In medical circles, on the other hand, Hey is regarded as one of the foremost surgeons of his day. William

²⁸³ Twentieth century studies of William Hey include Josephine Lloyd, ‘The casebooks of William Hey F.R.S. (1736-1819) : an analysis of a provincial surgical and midwifery practice’, (unpublished PhD thesis, University of Leeds, 2005) and W.G. Rimmer, ‘William Hey of Leeds: Surgeon (1736-1819), a reappraisal’, *Proceedings of the Leeds Philosophical and Literary Society, Literary and Historical Section* 9:7 (Leeds: Leeds Philosophical and Literary Society, 1961).

²⁸⁴ Pearson, *Life of Hey*, p. 133.

Hey entered private practice in Leeds in 1759 following the completion of an apprenticeship with William Dawson, a Leeds surgeon, and a stint in London under the guidance of William Bromfield, physician at St. George's hospital. Instrumental in founding the General Infirmary at Leeds in 1767, Hey acted first as honorary surgeon, and then from 1774 as its senior surgeon, until 1812 when he renounced the position in favour of his son William Hey junior.²⁸⁵ In these years Hey, an elite surgeon who practised both surgery and physic, received many accolades, including an election as fellow to the Royal Society in 1775, which he was awarded largely as a result of his friendship with Joseph Priestley the natural philosopher with whom Hey collaborated on experiments during Priestley's residence in Leeds between 1767 and 1773.²⁸⁶ With such an illustrious career in medicine and with an extensive legacy of letters, casebooks and manuscript papers, William Hey is an important figure in the history of medicine not just in Leeds but more broadly in Georgian England. We now turn to look at how William Hey had such an illustrious career by examining the early years of his life, his education, and medical training.

A. Education

William Hey was born in Leeds in 1736, the second son of Richard Hey and Mary Hey (nee Simpson). William's father Richard Hey, a dry-salter based in the woollen district of Leeds, was an ambitious self-made man, who mainly dealt in dyes, colourings and preservatives. As a result of his business Richard was able to build an impressive portfolio of land, including dwellings on Briggate, the town's main thoroughfare, and land on Woodhouse Lane and at Black Bank to the east of Leeds. By the mid eighteenth century his ambition extended beyond his own interests and to those of his young family; with his wife Mary Hey he had a number of children, including John Hey (-1815)

²⁸⁵ Leeds, West Yorkshire Archives, WYL 2295/32/1 Letter of resignation of William Hey 8 Oct 1812.

²⁸⁶ John Pearson, *Life of Hey*, p. 40. William Hey was also a member of the Royal College of Surgeons in London, an honorary member of the Royal College of Surgeons in Ireland, the Royal Medical Society in Edinburgh and of the Literary and Philosophical Society at Manchester.

who went onto become first Norrisian Professor of Divinity at the University of Cambridge, and William Hey, whom we have already met and who went onto become a surgeon in Leeds.²⁸⁷ Richard Hey made moves to ensure the future welfare of his sons; his foremost preoccupation was to find an educational establishment suitable for the sons of a wealthy merchant.

In 1743 Richard Hey sent William (then aged seven) and his elder brother John to board at an Academy at Heath near Wakefield. Hey, an Anglican, chose this educational establishment – which had only been established three years – over local establishments in Leeds, including a grammar school education. We can only surmise that he chose not to send his children to the Leeds Grammar School on the basis of the arguments proposed in chapter three of this thesis, including the distinct lack of modern curricula. There were no such fears in sending his children to the academy at Heath. The Academy, established by Joseph Randall (d.1789), the schoolmaster and agriculturalist, offered a wide range of subjects as well as specialist courses designed to prepare pupils for entrance into whatever future life they desired, be it university, life as a gentleman, a career in business, or entrance into the army or navy.²⁸⁸

In 1750 in a pamphlet advertising the Academy at Heath, Randall described the education provided at the Academy – the sort of education that William and John Hey would have received. School days at the academy were long: classes took place between seven in the morning and five at night, and the boys would most likely have boarded. The subjects taught at the Academy included ‘the whole of the Circle of Arts and Sciences, the common branches of education [and] languages’.²⁸⁹ Latin, Greek and French were taught by two classical tutors, Rev. Mr. Sedgewick, later Head of the Free

²⁸⁷ Richard and Mary Hey also had two other sons and three daughters. Their third son to survive into adult Samuel Hey, a.m. became a rector in Wiltshire and their final son Richard Hey became a barrister at law. *John Pearson, Life of William Hey (1822)*, p. lxxv.

²⁸⁸ Joseph Randall, *An Account of the Academy at Heath* (London, 1750), pp. 28-29. See also M. G. Watkins, ‘Randall, Joseph (d. 1789)’, ODNB, [<http://www.oxforddnb.com/wam.leeds.ac.uk/view/article/23110>, accessed 15 August 2014].

²⁸⁹ Randall, *Academy at Heath* (London, 1750), pp. 1-5; 15-20.

School at Leeds and Dr. Dodgson, later Bishop of Elfin who gave a book to Hey ‘as a testimony of his regard and approbation.’²⁹⁰ The Academy took a particular interest in the ‘scientific’ subjects – mathematics, natural and experimental philosophy and astronomy.²⁹¹ Among the tutors employed to teach these subjects between 1743 and 1750 when William Hey attended the Academy were George Gargrave (1710-1785), the mathematician who was employed at the academy from 1745, and John Arden (1721-1791/92) who later became an itinerant lecturer in experimental philosophy.²⁹² Both men owned experimental apparatus and used the apparatus to illustrate the twice weekly lectures on astronomy and philosophy.²⁹³

The curriculum at the Academy was strongly geared towards the sciences, but Randall placed equal pedagogic emphasis on book learning and print culture, so much so that he created a public library attached to the school. The library which numbered 1500 volumes by 1750, the year William Hey left the Academy, consisted of ‘Books in Every Branch of Learning’.²⁹⁴ Pupils at Randall’s paid between two and eight shillings for the privilege of borrowing books and using the library’s resources, which in turn were incorporated into lessons. From the outset of their education pupils were expected to spend every evening during term-time, including Sundays in study at the library. At these evening sessions pupils were taught to analyse and make critical judgements of texts, both written and oral, skills which were to prove of foundational importance to William

²⁹⁰ ‘Memoir of William Hey, Esq. FRS’ in *The Christian Guardian and Church of England Magazine July 1839* (pp. 242-249), p. 242; Pearson, *Life of Hey*, p. 4. This text was probably Doddridge’s *Rise and Progress of Religion in the Soul* (1756).

²⁹¹ Pearson, Rimmer and Lloyd all surmise that Hey’s lifelong interest in natural philosophy stemmed from his experiences at this academy.

²⁹² J. M. Rigg, ‘Gargrave, George (1710–1785)’, rev. Anita McConnell, *ODNB*, Oxford University Press, 2004 [<http://0-www.oxforddnb.com.wam.leeds.ac.uk/view/article/10382>, accessed 20 September 2014]. Arden’s lectures were eventually published by his son. James Arden, *Analysis of Mr Arden’s Course of Lectures in Natural and Experimental Philosophy* (1774). Hey was eventually to assist Arden in giving his philosophical lectures in Bath (where Arden had settled). For further details see Musson and Robinson, *Science and Technology*, p. 156; Pearson, *Life of Hey*, pp. 49-50.

²⁹³ J. M. Rigg, ‘Gargrave, George (1710–1785)’; Pearson, *Hey*, p. 4.

²⁹⁴ Randall, *Academy*, pp. 1-5; 15-20. Joseph Randall also published a number of textbooks for his pupils at the Academy including *A System of Geography* (1743).

Hey when as an adult he entered the practice of surgery. During these evening sessions pupils were required to choose a text of their choice from within the library's collections which they would then critically analyse prior to examination. The younger pupils not yet capable of 'making proper reflections on what they read' were 'requir'd to tell the story; and have proper directions given to them, to methodize the relations they give.' On the other hand, older pupils who had mastered oratory were required to produce a written report of their book, including the 'judgement he has form'd of the Design, and of the Instruction to be drawn from it'. The only time a pupil's choice of book was restricted was a Sunday, the holy day. On this day they could only read works of 'divinity, sacred history [or] discourses on practical subjects'.

William Hey spent seven years in total at Randall's Academy. In the process he developed an interest in natural philosophy and, importantly, in print culture. In 1750 when he turned fourteen, life as he knew it changed drastically; he was removed from the academy by his father, Richard Hey and as was customary in the eighteenth century, as the second son, young William found himself entered into an apprenticeship.

B. Apprenticeship

Richard Hey's choice of apprenticeship for William was a medical apprenticeship with William Dawson (1718-1777), a surgeon-apothecary based in Leeds. Since Richard Hey had married into a medical family surgery was a natural choice of profession for the second son. His wife Mary Hey was the daughter of Jacob Simpson (d.1738), a surgeon in Pudsey, Leeds, whose father William Simpson had been a physician in Wakefield. Indeed it had been agreed since infancy that William Hey would enter the medical profession when he came of age.²⁹⁵ Hey though was determined on a career in the navy, but on his father's advice relented on the proviso that he might one day become a naval surgeon.²⁹⁶ Thus in 1750 when he reached the age of fourteen and could be legally bound in an indenture William Hey found himself bound by his father into a seven-year

²⁹⁵ Pearson, *Hey*, p. 1.

²⁹⁶ *Ibid.*, p. 6.

apprenticeship with the aforementioned William Dawson, for the not inconsiderable sum of thirty pounds.²⁹⁷

We know little of Hey's experience of apprenticeship with Dawson. Apprentices were encouraged to work from dawn till dusk learning the skills of the trade either by manning the apothecary's shop or studying the art of medicine; Hey's apprenticeship probably followed a similar format. What little personal time Hey had during this apprenticeship was spent indulging his religious and textual interests; he studied the Holy Scriptures and 'other books of piety', culminating (much to the chagrin of the Dawsons) in his alignment with the Methodists when he reached the age of eighteen.²⁹⁸ The Dawsons considered Hey 'unnecessarily precise and strict' and on at least one occasion Mrs Dawson emphasised to Hey that he had made an error in associating with the Methodists. Hey's response was to educate her. He 'read to her occasionally the different writings of pious men', especially *The Rise and Progress of Religion in the Soul* by Dr. Doddridge his former classics teacher at Randall's Academy. These bookish habits and reflections on religion were a continuation of Hey's experiences at Randall's Academy where his evenings were spent in private study in the library undertaking textual analysis.

Richard Hey chose well in his choice of master for his son, and in turn William Dawson recognised Hey's surgical potential. William Dawson was the leading medical man in Leeds and the town's most senior surgeon-apothecary. Dawson was a skilled botanist and during his apprenticeship William Hey learnt many of the skills necessary for a career as a general practitioner.²⁹⁹ One of the few pieces of knowledge that have passed down to us about Hey's experience under Dawson is that as Dawson's apprentice Hey thoroughly mastered the apothecary's art. Apprentice apothecary-surgeons were typically responsible for running the shop while their master was out on business

²⁹⁷ S.T. Anning and W.K.J. Wallis, *A History of the Leeds School of Medicine* (Leeds, 1982), pp. 1-2.

²⁹⁸ See Pearson, *Hey*, pp. 10-12.

²⁹⁹ Dawson's adopted botanical system was that of Ray. Pearson, *Hey* p. 131; Josephine Lloyd 'The Casebooks of William Hey', p. 49.

attending patients.³⁰⁰ In order to do so, the apprentice needed a thorough knowledge of the various drugs in the apothecary's shop so that they could prepare prescriptions and answer customer queries. This was necessary knowledge for eighteenth-century practitioners who increasingly combined the two roles.³⁰¹ Early in his apprenticeship with Dawson, Hey underwent this training. Indeed if we are to believe his biographer John Pearson Hey's determination to personally learn and experience the 'medicinal virtues' of the drugs in Dawson's shop nearly cost him his life:

During the first years of his apprenticeship, William Hey was assiduous in gaining a knowledge of the sensible qualities of the drugs in Mr. Dawson's shop, their medicinal virtues, and even the taste of the several articles he was employed to compound; but his curiosity once led him beyond the boundaries of prudence; being desirous of experiencing the "delightful delusions" of opium, as described by Jones, he took so largely of Matthews's pill as to endanger his life. Mr Dawson and his friends were seriously alarmed; and it was only after the lapse of several hours, with all the aid his kind master could render him, that the noxious agency of this deleterious compound could be subdued.³⁰²

Sadly we know rather less of some of the other skills he learnt during his apprenticeship, particularly those relating to surgery. William Dawson was a surgeon-apothecary and would have performed operations in Leeds when the need arose. Nonetheless Dawson was described by Hey's son as having 'scarcely professed surgery', a phrase he may well have learnt from his father. William Hey's surgical experience under Dawson was probably limited to setting bones, drawing teeth, and curing wounds, the same sort of tasks that would have been undertaken by other apprentices of his period.³⁰³ In the eighteenth century an apprentice's surgical training was largely learnt on the job during patient visits. William Hey would have experienced surgical and obstetric training when such cases arose in Dawson's practice, attending the bedside and learning directly from

³⁰⁰ Irvine Loudon, *Medical Care and the General Practitioner 1750-1850* (Oxford: Oxford University Press, 1987), p. 39.

³⁰¹ *Ibid.*, pp. 39; 45. See also James Lucas, *A Candid Inquiry into the Education, Qualifications and Offices of a Surgeon-Apothecary* (Bath: S. Hazard, 1800).

³⁰² Pearson, *Hey*, pp. 6-7.

³⁰³ No mention of this aspect of Hey's apprenticeship is made either by his son William Hey junior, or by his biographer John Pearson. MS 504/1 'Medical Life' Part 1st; Pearson, *Hey*.

observation and from Dawson's experience. Indeed by the time his apprenticeship ended in 1757 William Hey would have been responsible for attending patients when Dawson was elsewhere engaged.

Upon completion of his apprenticeship William Hey's father encouraged him to undertake a year of further surgical training. By the mid eighteenth century, around the time when William Hey completed his apprenticeship there were two places a newly qualified surgeon could go to improve their surgical skills: Edinburgh or London.³⁰⁴ William Hey chose London.

C. London

By the mid eighteenth century a small number of newly-qualified elite surgeons had begun to visit London on completion of their apprenticeship. The purpose of time spent in the capital was to attend lectures and walk the hospital wards in order to gain prestige and improve surgical (and possibly also medical) knowledge in advance of entering the competitive market of private practice. When William Hey's indenture to William Dawson ended in 1757 rather than enter practice immediately as the majority of practitioners did, he too, on the advice of his father, decided to follow this newly established path and further his medical education in London.³⁰⁵

London in the mid eighteenth century was a thriving centre for students such as William Hey who wanted to improve their surgical skills and knowledge. Once they reached London, medical students were expected to gain clinical experience walking the wards in a London hospital and pursue anatomical knowledge attending lectures in anatomy such as those given by ambitious practitioners like William Hunter (1718-1783),

³⁰⁴On London medicine in the eighteenth century see Susan Lawrence, *Charitable Knowledge: Hospital Pupils and Practitioners in Eighteenth-Century London* (Cambridge: Cambridge University Press, 1996); on Edinburgh in the same period, see Lisa Rosner *Medical Education in the Age of Improvement: Edinburgh Students and Apprentices 1760-1826* (Edinburgh: Edinburgh University Press, 1991).

³⁰⁵MS 504/1 'Medical Life', 1r.

the famous anatomist.³⁰⁶ When he reached London in the autumn of 1757 Hey registered as a pupil at St. George's hospital, where as a walking pupil among surgeons such as William Bromfeild, Caesar Hawkins and William Hewitt, he would have attended the surgeon's rounds, occasionally visited patients outside of rounds, and watched operations and post-mortems.³⁰⁷ Then, as the winter season approached, Hey set about learning anatomy.

Anatomy lectures combined practical learning in the form of performing dissection with the scholarly habit of bookish learning. William Hunter for instance spent the first two sessions in his anatomy lectures covering the history of anatomy. In the process he listed various anatomists and medical authors whose work had influenced the field. Hunter encouraged his students to learn the basics of anatomy and dissection in the lecture theatre and wait until they had completed his lecture series before entering the dissection room, or engaging with the medical literature on anatomy so that the student would have 'no false, no confused ideas in his head'.³⁰⁸ Hey had a wide choice of anatomy lecturers to choose from. Along with the aforementioned William Hunter who taught anatomy in the 'Paris manner', assisted by his former pupil William Hewson (1739-1774), there were plenty of other lecturers on the subject. John Douglas (1727-1758) a surgeon was by 1757 lecturing on anatomy in Watling Street having previously held lectures at his house, while Dale Ingram (1710-1793) a surgeon and man-midwife lectured on anatomy from his house in Fenchurch Street.³⁰⁹ In that same year

³⁰⁶ It cost between £21 and £32 per year to walk the wards at a London hospital, before the cost of accommodation and other fees are taken into account. Susan Lawrence, *Charitable Knowledge*, p. 109.

³⁰⁷ The choice of St. George's hospital was likely encouraged by William Dawson, Hey's former master. In 1757 Ambrose Dawson, William Dawson's cousin held an appointment as physician at St. George's hospital. Josephine Lloyd, 'Casebooks', p. 55.

³⁰⁸ William Hunter, *Two Introductory Lectures to his Last Course of Anatomical Lectures* (London: J. Johnson, 1784), p. 107.

³⁰⁹ These and the subsequent notes on lecturers in eighteenth-century London are taken from Appendix 1: 'Lecturers in anatomy, surgery or midwifery in London, active 1746-1800', in Simon Chaplin, 'John Hunter and the 'museum oeconomy', 1750-1800' (unpublished PhD thesis, 2009) pp. 325-339; and Appendix III. 'London medical lectures, 1700-1820', in Lawrence, *Charitable Knowledge*, pp. 361-377.

Charles Nicholas Jenty (fl 1735-1765), a French surgeon and man-midwife, advertised a series of lectures on anatomy, as did Isaac Minors (d. 1793) a surgeon who lectured on anatomy between 1753 and 1763 and in 1755 had proposed the establishment of an anatomy school at Surgeon's Hall. Other anatomy lecturers in London in this period included James Moffat (bap. 1725-1777), William Bromfield's successor in Great Queen Street, and Henry Watson (1720-1793), a former pupil of William Hunter's and surgeon at Middlesex Hospital between 1751 and 1761, thereafter at Westminster Hospital.

When William Hey arrived in London in the autumn / winter of the year 1757 he, like many others, set about attending the anatomical lectures which were on offer during the winter months. These anatomy lectures were to prove enlightening to the young surgeon. Hey would forever consider 'anatomy as the foundation of medical science'.³¹⁰ Unfortunately no records exist for whom taught Hey anatomy during this formative period of his life. As we have seen a range of surgeons and physicians taught anatomy in eighteenth-century London, and Hey probably attended the anatomical lectures of either William Hunter, whose anatomy lectures covered nearly 'the whole *medical* curriculum', or James Moffat.³¹¹ William Hunter would have deemed the young Hey a 'diligent student'.³¹² Hey was one of a select group of eager students who supplemented the knowledge of anatomy they learnt in class with a combination of practical observation and independent learning. He frequently spent twelve hours per day in the lecture and dissecting rooms, honing his skills of anatomical observation.³¹³

³¹⁰ Pearson, *Hey*, pp. 7-10; , MS 504/1 'Medical Life', 2r.

³¹¹ Othmar Keel, 'The Politics of Health and the Institutionalisation of Clinical Practices in Europe in the Second Half of the Eighteenth Century', in *William Hunter and the Eighteenth-Century Medical World* ed. by W.F. Bynum and Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 207-258, (p. 228). Hey could have attended either of these anatomy lectures: Hey was later in correspondence with Hunter from which we may suppose he attended Hunter's lectures. But Hey may have equally attended Moffat's lectures. Hey was a pupil of William Bromfield's at St. George's hospital, and James Moffat succeeded William Bromfeild as lecturer in surgery and anatomy in Great Queen Street. Moreover, Bromfeild's syllabus formed the basis of Moffat's lectures.

³¹² Hunter, *Lectures*, p. 107.

³¹³ Pearson, *Hey*, pp. 7-10; , MS 504/1 'Medical Life', 2r.

According to biographical notes later produced by his son (which were probably based on what Hey himself had said), it was during this period of his medical education that William Hey began to supplement his hard-won knowledge in the dissecting room with anatomical information gained from reading medical texts:

After having dissected sufficiently with the use of books and demonstrations he set himself to dissect without them and composed a description of the nerves and blood vessels from his own dissections: which (as far as it was completed) was found very accurate.³¹⁴

By the mid eighteenth century a range of medical texts including many new works of anatomy were available for purchase by medical students and other interested members of the reading public.³¹⁵ In his introductory lectures on anatomy, William Hunter acquainted his students with the key medical authors and literature in the field of anatomy. Hunter mentioned ancients such as Galen and Hippocrates, as well as the recent undertakings on anatomy such as folio works on the bones by Cheselden, Albinus, Sae and Trew; on the muscles by Albinus and Cowper, and by Haller on the blood.³¹⁶ Hunter regarded reading as a useful and improving exercise for the would-be practitioner; ‘the more he reads, of the best and latest writers especially, the more he will improve himself’, but only encouraged his students to engage with printed material once they had completed his course of lectures and learnt the foundations of anatomy.³¹⁷ William Hey would have relied on such medical tomes when dissecting with ‘the use of books’.

As well as attending anatomical lectures between the autumn of 1757 and the spring of 1759 Hey attended various other lectures on subjects ranging from medicine, midwifery and surgery. These lectures were given (in order) by Dr Donald Monro (1728-1802), the newly appointed physician at St. George’s hospital and an elder brother of

³¹⁴ MS 504/1 ‘Medical Life’, 2r.

³¹⁵ On the range of anatomy publications published between the sixteenth and eighteenth centuries, see Andrew Cunningham, *The Anatomist Anatomis’d: An Experimental Discipline in Enlightenment Europe* (Farnham: Ashgate Publishing Limited, 2010), pp. 55-65.

³¹⁶ Hunter, *Lectures*, pp. 57-58; 66-68.

³¹⁷ *Ibid.*, p. 108.

Alexander Monro II, Professor of Anatomy at Edinburgh University; Dr Colin Mackenzie (1697-1775) a Scottish physician specialising in obstetrics, and a former pupil of William Smellie (1697-1763); and Percival Pott, surgeon at St. Bartholomew's hospital.

William Hey utilised his attendance at these lectures and his pupillage at St. George's hospital, where in June 1768 he had been promoted to William Bromfeild's dresser, as an opportunity to further his medical knowledge.³¹⁸ The role of dresser to a surgeon was prestigious and would have seen Hey taking on an active role in the treatment of patients. He would have bandaged wounds, performed bleeding and minor operations, and assisted with capital operations. Richard Hey was no doubt willing to pay the extra fee necessary for this experience which amounted to somewhere in the region of £50 per year to the individual surgeon. Hey accumulated as much knowledge as possible from these practitioners in order to build upon his experiences in the dissection room and that which he had gathered by reading:

He endeavoured to become acquainted with the opinions of his teachers by asking them questions and for this purpose he generally took with him to lectures, a list of questions which had occurred to him since the preceding lecture & proposed them before or when a lecture was over. I have heard him mention this particularly in respect to the lectures in midwifery & say that he believed his teacher [Dr. Mackenzie] had scarcely an opinion with which he had not (in this way) become acquainted.³¹⁹

Such was the importance of this experience to William Hey that three decades later later he recommended a similar course of action to his son Richard. Writing to his son Richard Hey when he was about to commence study in London in the 1780s William Hey recommended that the importance of attentive observation at lectures, and noted that when studying in London he used to read and think upon medical subjects (just as he had done at Randall's Academy) in order to advance his own medical knowledge:

When you attend Dr. Lowder [...] I would advise you to sit by the machine all the time of the lecture. I found more advantage from seeing the various ways in which others got wrong, than from corrected, merely for my own blunders. I used

³¹⁸ Lawrence, *Charitable Knowledge*, p. 109.

³¹⁹ MS 504/1 'Medical Life', pp. 2r-3r.

likewise to get leave to come a little before the lecture began, to propose my doubts and queries, collected from reading and thinking on the subject, or arising from what had passed at the former lecture. Dr. Mackenzie was exceedingly kind to me in permitting this freedom.³²⁰

Hey's experiences in the capital were to prove formative when entering professional practice and ultimately prove integral to the decisions Hey took when treating patients. In particular the education and training Hey received in these formative years of his life instilled in him the importance of working with and learning from others. They led him to question and challenge medical theory and discoveries. It was in his London training that Hey built on his earlier experience of bookish learning at Randall's Academy and began combining learned knowledge through reading books and attending lectures along with practical knowledge in the form of dissection and anatomy. It was a practice he was to continue throughout his lifetime.

D. Practising Medicine in Georgian Leeds

In the spring of 1759 having spent a year and half advancing his medical knowledge in London William Hey's father suggested his son should continue studying in Paris. Richard Hey believed Paris was the premier centre for medical study in the eighteenth century, what he did not know, but William Hey did, is that London had come to match Paris's reputation. For much of the early eighteenth century Paris had been the premier centre for medical study, particularly in anatomy.³²¹ By the mid eighteenth century London held this honour thanks to a recent revolution in anatomical teaching in the capital which dated from 1746 when William Hunter advertised his first series of anatomical lectures in the French manner. In other words students would be able to dissect whole cadavers themselves, as was practised in the French hospitals and among the private anatomy teachers.³²² Shortly after, London was recognised as the superior

³²⁰Letter from William Hey to Richard Hey, (nd). Quoted in Pearson, *Hey* pp. 16-18.

³²¹See T. Gelfand. 'The "Paris Manner" of Dissection: Student Anatomical Dissection in early eighteenth century Paris', *Bulletin of the History of Medicine* 46 (1972), 99-130.

³²²Cunningham, *Anatomist*, p. 135 and Gelfand, "Paris manner".

capital to Paris for medical students wanting to learn surgery and anatomy. It was a status emphasised by the anonymous publication in 1750 *A Short Comparative View on the Practice of Surgery in the French Hospitals* and by 1780 the city was judged 'the Metropolis of the whole world for practical medicine'.³²³ William Hey who had received the finest education in surgery and anatomy possible in the eighteenth century, in London, this refused his father's offer of studying in Paris and instead returned to Leeds to set up private practice.

In the eighteenth century it was common for medical apprentices to join their master's practice on completion of an apprenticeship in the hope of one day securing a partnership.³²⁴ William Dawson, Hey's former master immediately set about persuading Hey to join his practice. Dawson aware of his potential and without an heir, offered Hey a partnership, but Hey refused. Instead with the help of his father Hey established his own practice in Slip-Inn Yard, just off Briggate Leeds's main thoroughfare. It was here that William Hey began practising surgery in 1759. In spite of the rebuffal of his offer of a partnership William Hey and William Dawson remained on friendly terms and Dawson even promised to send him 'as many of his surgical patients as he was able'.³²⁵ Dawson's encouragement proved successful. Hey quickly became the town's leading surgeon. In his first year alone Hey performed complex operations such as lithotomy (an operation whereby a kidney stone is removed from the urinary tract), that had never been seen before in the provincial setting of Leeds. In this he was aided in no small part by the surgical training he had undergone in London, which had provided him with the skills necessary to perform such complex surgery such as lithotomy. However in spite of his considerable surgical prowess, it was some years before William Hey's practice became

³²³ Anon, *A Short Comparative View* (London, 1750); quoted in T. Gelfand, "Invite the Philosopher, as well as the charitable': Hospital Teaching as Private Enterprise in Hunterian London", in *William Hunter and the Eighteenth-Century Medical World* ed. by W.F. Bynum and Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 129-152 (p. 138).

³²⁴ Loudon, *Medical Care*, p. 29.

³²⁵MS 504/1 'Medical Life', 4r.

financially viable.³²⁶ Having attended lectures on surgery and midwifery in London, Hey sensibly assumed the dual roles of surgeon and man-midwife on his return to Leeds. Still, Hey, like many other practitioners, struggled to make ends meet. In the early years of his practice ‘the emoluments of his business were so small, as not to maintain his family, independently of his private fortune’, and with a wife and young family to support, he was forced to take on extra responsibility.³²⁷

In February 1762 Hey assumed the position of medical attendant at the Leeds Workhouse, taking over from his close friend and fellow surgeon Francis Billam. Hey retained the position for a year, thereafter taking apprentices to supplement his income.³²⁸ The year 1767 saw Hey heavily involved in the move towards the establishment of an Infirmary in the town, where he was the only medical man on the Infirmary’s Building Committee. When the honorary appointments were made to the Faculty of the Infirmary Hey found himself unanimously elected to the position of surgeon. He assumed the role of senior surgeon in 1773, and retained the post until his retirement in 1812 at the age of nearly eighty, despite damaging his knee so severely in 1778 that he was unable to walk without the help of a cane.³²⁹ Instead he relied on a chaise (the status symbol of wealthy and influential practitioners) to transport him to his patients at his surgery. By c.1790 Hey was a wealthy man with an income in the thousands rather than the typical £400 or so that a well-established surgeon-apothecary

³²⁶ As late as 1834 G.J. Guthrie in his evidence to the Select Committee on Medical Education estimated that a newly qualified practitioner would only make thirty pounds a year performing surgery in the eighteenth century and would need to take on midwifery cases as well if they were to make a living. Quoted in Loudon *Medical Care*, p. 97 (*SCME*, Part II, Q. 4801).

³²⁷ MS 504/2 ‘Medical Life of Mr Hey Part 2nd’, 2r.

³²⁸ One of Hey’s more notable apprentices was Richard Walker, who was indentured in 1763 and later become Apothecary to the Prince of Wales. Hey was Master to Walker from 1763 and it is presumably Walker who is referred to in a case Hey encountered on July 1st 1766: ‘My ‘prentice who bled her ye first time [..]’ Leeds, Brotherton Library, Special Collections, MS 628/2 Medical and Surgical Cases, Case 26, p. 88.

³²⁹ This accident caused Hey to be absent from practice for four months. During this time he went to London to seek the advice of his peers and experienced the sea-air at Harwich. During this trip Hey also reunited with his former lecturer in natural philosophy at Heath Academy, John Arden, and aided Arden in his lectures in Bath by performing a dissection on the eye. MS 504/1 ‘Medical Life’, 15r.

could expect to earn per year in the provinces.³³⁰ As well as owning a chaise Hey had come to emulate certain other habits of wealthy practitioners. He began to invest in land, including a plot on Albion Place in the centre of Leeds where he built a private dwelling with surgical practice attached where he proceeded to treat his private patients. Throughout the remainder of his lifetime, Hey was committed to surgery in Leeds both at the Infirmary, and in his private practice and had few sustained breaks from practice in Leeds prior to his retirement from surgery in 1812.

5.2 William Hey: An elite practitioner

Medical knowledge was constantly evolving in the eighteenth century and a practitioner's medical education did not simply stop once they had completed their apprenticeship. Once in practice medical men of the eighteenth century were expected to continue to advance their medical knowledge. In print at least, working practitioners were constantly urged to spend time improving their medical knowledge: 'a medical man should spend the principal part of the time he can spare from business at home and in his study'.³³¹ In William Hey's case, although the year 1759 supposedly marked the end of Hey's formal study of medicine and his return to Leeds to set up private practice, in reality it marked the beginning of a lifetime dedicated to study and improvement in the field. In private practice Hey continued to improve his medical knowledge through a combination of practical skill, observation and theoretical learning, just as he had done in London. We now turn to explore how he advanced his knowledge of medicine and surgery through an analysis of the patient case notes he recorded during his seven decades of practice in Leeds.

In the eighteenth century exceptional medical practitioners kept case histories of patients they treated. Such case histories have traditionally been associated with the clinical practice of physicians: students at Edinburgh for instance faced an examination

³³⁰ Loudon, *Medical Care*, p. 113.

³³¹ J.K. Makittrick, *Commentaries*, (1772). Quoted in Loudon, *Medical Care*, p. 45.

on case histories before they could graduate.³³² Popular examples include the clinical case records of Robert Cleghorn, a Scottish physician whose case records survive for the period 1785-1818.³³³ Trainee surgeons first encountered case histories during apprenticeship. Apprentices were required to compile case histories of patients on behalf of their master, and historian of medicine Susan Lawrence argues they were expected to include:

A description of the patient; an account of his or her past experiences and current symptoms; the discovery of her or his individual patterns in sleep, diet, and exercise; and then the description of therapies, their effects, the ongoing state of the patient, and usually, how the connection between practitioner and patient ended, in dismissal, relief, cure or death.³³⁴

William Hey would have had the importance of maintaining case histories of his patients reinforced during his spell in London. In his anatomical lectures William Hunter encouraged his pupils to take good notes as future practice for when they were in practice and might want to publish a case or need to write a case report to the family of a (deceased) patient.³³⁵ Students walking the wards in London hospitals would have taken notes on unusual ward cases and patients, although the practice was most common among dressers (the elite).³³⁶ William Hey, as dresser to William Bromfeild at St. George's hospital may well have had a similar experience to John Coakley Lettsom (1744-1815), physician and founder of the London Medical Society. In his memoirs

³³² In order to graduate from Edinburgh the physician had to write a thesis, take an oral examination and complete a written examination. This written paper was comprised of writing two case histories, commenting upon a Hippocratic aphorism, and writing an answer to a general medical question that the professors had set on the basis of their lecture courses. Lisa Rosner *Medical Education* p. 81.

³³³ Fiona A. MacDonald 'Reading Cleghorn the Clinician: The Clinical Case Records of Dr. Robert Cleghorn, 1785-1818' in Charles W.J. Withers and Paul Wood (eds) *Science and Medicine in the Scottish Enlightenment* (East Linton: Tuckwell Press, 2002), pp. 255-279. Other examples include: Jean E. Ward and Joan Yell (eds), 'The medical casebook of William Brownrigg, M.D., F.R.S. (1712-1800) of the town of Whitehaven in Cumberland' *Medical History Supplement 13* (1993) and from the nineteenth century, Richard H. Ellis (ed) 'The Casebooks of Dr. John Snow' *Medical History Supplement 14* (1994).

³³⁴ Lawrence, *Charitable Knowledge*, p. 237.

³³⁵ Hunter *Lectures*, pp. 106-107.

³³⁶ Lawrence, *Charitable Knowledge*, pp. 150-153.

Lettsom who had studied as a surgeon's dresser at St. Thomas's Hospital in 1766 recalled that when walking the wards he used to observe the patients and make private case notes:

I devoted myself incessantly to the Hospital... In the morning, early, before any attendance was given, I usually visited many select patients, wrote out the symptoms, and afterwards examined the prescriptions of the physicians on some particular cases... At the same time, I continued to take notes of, and made reflections upon, what I saw and thus acquired a method of investigation and decision, which ever afterwards proved of the highest use in determining my medical conduct and practice.³³⁷

This method of investigation and reflection resonates throughout William Hey's extant case histories.

The case histories which cover the period 1759 – 1812, the entire period Hey practiced surgery in Leeds, still survive almost completely intact. An analysis of these histories shows how William Hey was able to increase his grasp of medical knowledge when a practising surgeon in the provinces, far removed from Edinburgh and London, the metropolitan centres of medical enlightenment.

Writing the preface to his 1803 publication *Practical Observations in Surgery*, William Hey stated he had maintained records of his patients with the expectation that that they could help improve his treatment of certain medical cases and conditions, and ultimately improve his medical knowledge:

Soon after I had entered into the Medical Profession, I began the custom of committing to paper such cases, which occurred in my practice as seemed rare, or peculiarly instructive; hoping that the perusal of them might assist me in the discrimination and cure of diseases.³³⁸

An analysis of the extant case histories provides evidence of the selectiveness which Hey deployed when choosing which patients' illnesses to detail. The case histories that survive today are not the original notes Hey would have made at the patient's bedside or

³³⁷ Lettsom, *Memoirs* quoted in Lawrence, *Charitable Knowledge* p. 150.

³³⁸ William Hey, *Practical Observations in Surgery* (London: T. Cadell and W. Davies, 1803), p. iii.

in surgery. There are no blood splatters on any of the pages, and in any case each volume of case notes is paginated and indexed. At some point, presumably when William Hey wrote up his notes in private, he divided the cases into volumes dependent on whether the patient's case fell into his category of 'midwifery' (ten volumes) or 'medical or surgical' (thirteen volumes). Moreover between 1763 and 1809, the years for which eleven of the original thirteen 'medical or surgical' volumes are extant, Hey only recorded 577 cases and the maximum number of cases he recorded in any year was forty in 1764.³³⁹ The figure of 577 cases is but a fraction of the total number of medical and surgical cases he would have treated in his lifetime. Clearly the extant case histories are the work of a surgeon reflecting on the diagnosis and treatment of his patients.

A sense of community atmosphere prevails throughout the entries in Hey's casebooks. A definable group of practitioners including physicians and surgeons, formed a network of cooperation in mid eighteenth-century Leeds, and could frequently be found in consultation with one another and in attendance at cases together, and medical knowledge and expertise was shared among equals. Hey frequently attended cases with other surgeons, often coming face to face with the physician who was also treating the patient, as was common in an era when patients sought treatment from a variety of practitioners, often at the same time. Furthermore Hey rarely undertook a dissection without being accompanied by at least one other surgeon, a safeguarding practice that was frequently employed by surgeons in the eighteenth century.

³³⁹ The first volume of Hey's 'medical and surgical' is missing from the Brotherton Library, University of Leeds where Hey's archives are held. No volume 13 is listed in the library's catalogue but it certainly existed at the time of Hey's death. Hey referred to this volume in volume twelve of his 'medical and surgical cases' stating that his notes on a particular case were 'continued no. 13 p. 1'. It is likely that this thirteenth volume covered the final years of his practice from 1809 until his retirement in 1812. MS 628/12, p. 179 Sadly I have been unable to access volumes seven and eight of Hey's medical and surgical case notes due to their poor state of repair. Fortunately some account of the cases in these two volumes can be found in Josephine Lloyd, 'Casebooks'.

A. Practical Observation

Hey's early case notes are full of observations on his London training, and he regularly made reference to the sorts of medical and surgical technique he had learnt from shadowing William Bromfeild at St. George's hospital.³⁴⁰ Hey's case histories are significant for what they reveal about the ways in which practitioners continued to advance their medical knowledge beyond their formal education.

In the early years of his practice William Hey interacted with a select group of surgeons and physicians when treating patients. The group included fellow surgeons Francis Billam and James Lucas, and two physicians, James Crowther and William Hird. These same practitioners would form the initial membership of the medical society in Leeds (designed to pool and improve medical knowledge), and in 1767 formed the inaugural intake of staff of the General Infirmary at Leeds. Whilst Hey co-operated with this group from 1767, the co-operative attitude among this group of practitioners dates from at least 1765. In that year William Hey treated a male patient suffering from empyema (a collection of pus) over the course of several months with the aid of his fellow practitioners. The patient (one of only a few surgical cases contained in volume two of Hey's 'medical and surgical' casebooks) whom William Hey first visited in May 1765 was initially diagnosed as suffering from a tumour of the breast. Whilst Hey prescribed an operation as the only course of action, the patient desired a second opinion. At this stage Hey called upon the opinion of James Crowther, physician, who agreed with Hey's diagnosis:

Dr Crowther was called in, who was of opinion with me, that it was necessary to open the tumour in its most depending part, or at least, as low as the situation would admit of.

³⁴⁰ See for instance a case involving the luxation of the joint formed by the first and second bones of the thumb. MS 628/2, Case 39, pp. 135-136.

This sort of joint attendance at a patient's bedside was a common feature of eighteenth-century medical practice. Physicians and surgeons would often attend a patient together to give a prognosis, particularly in a difficult case such as the one recorded here.³⁴¹ Hey operated on the patient but by September the patient had not fully recovered and was suffering from a continual fever. Upon examination Hey became unhappy with the amount of matter congealing below the wound made during the operation and determined to operate again. But prior to performing the operation, he again consulted with a medical practitioner, this time with a surgeon Francis Billam:

We perceived the matter rested too much below the wound and made the integuments more prominent between the 3rd and 4th ribs. I judged it would be proper to make an opening close to the 4th rib, and called in Mr. Billam to give me his opinion.

Billam advised against the operation and suggested a cannula might be a more effective treatment. Hey followed Billam's advice and 'resolved to wait a few days and first try the effect of the cannula', saving the patient from the horror of a further operation.³⁴² The matter, the pus from an empyema, was drained, and the patient recovered.

This is just one example of the informal attitude of co-operation and consultation among Leeds's medical practitioners evidenced in Hey's casebooks in the years prior to the establishment of the Infirmary. Nearly a quarter of the cases (thirteen out of the forty-five cases) Hey treated between 1765 and 1767, the years covered by the second volume of his case histories included the presence of at least one other practitioner. Working together in such close proximity the group naturally came to share their medical knowledge, although the advice did not always prove successful. Twice William Hey followed the advice of William Hird, the Quaker physician with whom he most frequently consulted in the first years of his practice, and twice Hird's advice proved ineffective.³⁴³ For instance in 1765 William Hey treated a toddler for chin cough

³⁴¹ MacDonald 'Reading Cleghorn' p. 264.

³⁴² MS 628/2 Case 42: Sept 1765 pp. 144-148.

³⁴³ Hey and Hird co-operated on seven cases between 1765 and 1767.

(whooping cough). Hey had given the patient 'abt 3iii of Tinct-Cathadid: in the dose of ten drops twice a day' on William Hird's recommendation, although Hey found the treatment 'did not bring on strangury or procure any sensible relief in this case'. William Hird had learnt of this cure for whooping cough from a quaker surgeon in Settle, Abraham Sutcliffe (best known for being John Lettsom's master during his apprenticeship). This example shows the way medical treatments were communicated orally between practitioners in the eighteenth century.³⁴⁴ In 1775 Hey again followed Hird's advice in his treatment of a patient with confluent smallpox. Hird informed Hey that the confluent smallpox responded well to treatment with Calomel and Jalap; 'the postules ripening well and the soreness of the throat abating amazingly'. It was a treatment Hird had successfully tried on eight patients before mentioning it to Hey, but again it did not work when Hey tested it on a patient: 'I tried it in May but without success.'³⁴⁵

The entries in Hey's case histories demonstrate that there was a mutual sharing of knowledge and an informal co-operation among the Leeds practitioners. As practitioners honed their skills, a benefit of this co-operation and oral exchange of ideas and practices was the improvement of local medical knowledge as practitioners copied one another's practice. The co-operative attitude to medical treatment and improvement in Leeds among the town's physicians and surgeons demonstrated in Hey's casebooks was paralleled elsewhere in Georgian Britain. Fiona MacDonald's study of the clinical case records of Glasgow physician Robert Cleghorn between 1785 and 1818 found similar levels of professional interaction between physicians and surgeons. In Glasgow, as in Leeds, surgeons and physicians could be found 'acting as equals in a collegial way', and were involved in the 'setting up professional networks of co-operation and interaction [...] that led to a mutual exchange of skills and knowledge.'³⁴⁶ Although MacDonald attributes the high levels of cooperation between physicians and surgeons in

³⁴⁴ MS 628/2, CASE 22 pp. 67-68, April 13th 1766, p. 68.

³⁴⁵ MS 628/4, 'Occasional remarks', p. 172.

³⁴⁶ MacDonald 'Reading Cleghorn' p. 272.

Glasgow to the peculiarity of the town's licensing system, where 'Physicians, surgeons (and apothecaries) were admitted as members of the same corporate medical licensing body'; the case of Leeds – where no such system was in place – suggests that the forming of networks of cooperation among surgeons and physicians may have been a common feature in eighteenth-century medical practice.³⁴⁷

5.3 William Hey: Printed Medical Matter in Hey's Case Histories

By 1800, 5 per cent of the books published in England were in the field of medicine. With the exception of Thornton and Porter et al, few studies have examined the emergence of the English medical press in the eighteenth century, much less the extent to which this field impacted upon the practice of medicine in Georgian England.³⁴⁸ In this section, I argue that printed medical matter did play a role in furthering William Hey's medical knowledge after the completion of his medical education. Hey's involvement in founding the Leeds Medical Library and his subsequent use of the library attest to his interest in printed medical matter.³⁴⁹ What we do not know, or to date have had evidence for, is the relationship between Hey's interest in printed medical matter, his daily practice and the advancement of his medical knowledge from 1759 onwards. But the entries in Hey's case histories provide us with a means to make these connections.

William Hey cited medical authors, books, articles or periodicals in twenty-nine of his 577 extant medical and surgical case histories. This is equivalent to just 5% of the total number of case histories Hey recorded throughout his lifetime. At first glance, one might infer from this that Hey made little use of printed medical matter in his working life. But Hey mentioned printed medical sources on more than just twenty-nine occasions – in those cases where Hey resorted to printed medical matter he often

³⁴⁷ *Ibid.*, p. 257.

³⁴⁸ Thornton, *Medical books; Medical Journals and Medical Knowledge: Historical Essays* ed. by W. F. Bynum, S. Lock and R. Porter (London: Routledge, 1992).

³⁴⁹ This will be traced in the extant lending registers of the library. Leeds, Special Collections, Brotherton Library, MS 1591: Register of Circulation of the Library, 1802-1827.

referred to one or more medical authors/treatises and in total cited forty-nine different sources. Moreover what the case histories do not show is how frequently Hey read medical matter in his spare time; how often he visited the Medical Library at the Infirmary during his working week to look up individual cases, or how often he borrowed medical books prior to 1802 when the borrowing records of the medical library begin. Such are the numerous difficulties involved in recreating a person's reading habits. What then, were William Hey's reasons for resorting to printed medical matter when treating his patients? His main purpose was to better educate himself in the practice of surgery and physic and to enhance his treatment or knowledge of a patient's illness. Our discussion now turns to show how Hey began to challenge his own medical technique through experimentation with treatments and surgery on the basis of the material he read.

William Hey had long recognised the importance of self-education. It had been a constant theme of his schooling (Sunday evening book choice), apprenticeship (testing the apothecary's drugs and nearly dying from poisoning) and training in London (up to twelve hours a day spent dissecting cadavers in order to master anatomy). It comes as no surprise then to find that William Hey relied on printed medical matter in order to better educate and inform himself in medical matters. Books were an important means by which Hey acquired medical knowledge when studying in London, and he continued to develop his medical knowledge when a qualified surgeon, by reading the latest medical developments as they appeared in print and applying these to his own practice. One particular case which dates from August 1775 and which Hey recorded in volume six of his 'medical and surgical cases', provides evidence that Hey relied on medical knowledge gained from printed matter to assist his treatment of the case.

Mr Crompton, Hey's patient was suffering from an infection of the bladder. Hey's initial diagnosis and subsequent treatment produced little relief for his patient and so he began to utilise other methods of treatment. Recollecting that Crompton's symptoms were similar to those reported by Ebenezer Gilchrist, a physician based at Dumfries, in his article 'on the thickening of the urinary bladder', Hey (after consulting

with Crompton's own physician, Dr Smith of Doncaster) entered into a course of treatment based upon the Edinburgh Mercurial Pill (Gilchrist's recommended method of treatment). Within three days the patient was well enough to return home.³⁵⁰

Crompton's case shows that Hey was actively engaged in reading alongside his medical practice. In the case history Hey readily admitted he was aware of the contents of Gilchrist's article when he encountered Crompton's symptoms, but claimed that he only made the connection between the two upon determining that Crompton's case 'was an enlargement of the bladder itself'. Having made this judgement, but unaware of the best mode of treatment, Hey recollected that similar cases were listed in the third volume of *Essays and Observations*, at which point he began to consider treatment based on Gilchrist's method. Personal remarks included after his case history of Crompton show that Hey was determined to learn from this experience. Hey's remarks suggest he spent a considerable amount of time reconsidering his treatment of Crompton, as well as reassessing his actions in three similar cases he had encountered, all of which had ended in fatality. In two of these cases, Hey concluded, he had misdiagnosed the patient's symptoms and now considered them too to have been suffering from an enlargement of the bladder. Such self-examination enabled Hey to expand his medical knowledge of the bladder. He was better educated when faced with the question of which method of treatment to pursue in similar cases.

A year later the opportunity arose to test this theory. On 22 June 1776 Hey visited Mrs Tatlock, who was 'feverish, complained of much pain in making water and had a very frequent motion, perhaps 20 times in the 24 hours'. Initially Hey attempted to treat his patient's symptoms with a purging draught, followed by a mild diet of milk, farinaceous substances, and barley water but to no avail. On 4 June having had success in Crompton's case, Hey chose to try Dr Gilchrist's method of treating the thickened bladder on Mrs Tatlock:

³⁵⁰ MS 628/6, Case 10, pp. 22-29; 32-36.

June 4th I determined to try Dr. Gilchrists method of treating the thickened bladder (see Phys: & Literary Essays vol 3d 471) & added purgent... taken every night at bedtime.³⁵¹

This time the treatment proved unsuccessful. Although the application of Dr Gilchrist's method failed when administered to Mrs Tatlock, the case as a whole demonstrates Hey's willingness to engage in new medical treatments gathered from reading printed material and to apply this knowledge in practice time and again.

Another example, in the early nineteenth century, shows that Hey prepared for an operation on a patient by reading the latest work on hernia by Astley Cooper. In 1808 Hey recorded an account of a lady with a strangulated hernia who had been admitted to the infirmary.

January 25th 1808 Mary Lister aged 60 was brought into the Infirmary at 2 O'clock having a strangulated inguinal Hernia, which descended into the right...'

...26th We visited her at 8 in the morning, and found the hernia rather enlarged. Pulse frequent- abdomen somewhat distended. We now proposed the operation; but she refused the consent.³⁵²

On that same day, 26 January, Hey borrowed a book on Hernia, from the medical library, by Cooper. He went on to record that his patient died on 27 January and having no more need for the work on Hernia by Cooper that he had borrowed, the records show that he returned the book on 30 January.

5.4 The Wider Medical Print Culture in Georgian Leeds

William Hey was by no means the only Leeds-based surgeon who continued to expand his medical knowledge once practising in the town. In the eighteenth century a number of other Leeds practitioners took personal development in the field of medicine seriously. Like Hey, they too sought to improve their medical knowledge through a

³⁵¹ Ibid., Case 32, May 22 1776, pp. 136-138.

³⁵² MS 628/12, pp. 270-273.

combination of observation, reading and experimentation in practice. We shall explore this through the examples of surgeon-apothecaries James Lucas and the Carr family, and an apothecary, James Peacocke.

A. James Lucas

James Lucas (1742-1814), was William Hey's fellow surgeon at the Leeds Infirmary. It is unclear if Lucas's initial training was similar to that experienced by Hey. No apprenticeship records survive, but we do know that Lucas (like Hey) spent a year in London gaining professional experience attending lectures and walking the wards. In London, Lucas was based at St. Bartholomew's where he shadowed the surgeon Percival Pott (whose lectures Hey had attended). When he returned to Leeds, Lucas entered into a partnership with Dawson and, in 1767, on Dawson's recommendation, Lucas was made a surgeon of the Infirmary, a position he retained until 1793.³⁵³

Just as for William Hey, the year in London proved informative for James Lucas. It imparted upon him the significance of furthering his medical knowledge beyond the practical training, particularly by reading upon medical subjects in private study. Writing in 1800, from his own personal experience, Lucas urged any young man destined for the profession of medicine to make 'some preparatory professional lessons, such as the London Dispensary, and Hippocrates's Aphorisms, or any similar technical books' prior to entering into an apprenticeship.³⁵⁴ Once in an apprenticeship, any leisure time should be spent 'in having recourse to books on the Materia Medica, by which a farther knowledge of things in his custody may be gradually collected'. A pupil's time 'should not be wasted in perusing uninstructional, or prejudicial Books, but the principal Study should be

³⁵³ He retired from practice in 1794. Sometime after this he moved to Bath, but he resumed practice again towards the end of his life. In October 1807 he moved to Ripon (Masham) where he acted as a Consulting Surgeon. MS 504/2 'Medical Life of Mr Hey Part 2nd', 3v; *Extraordinary Life and Character of Mary Bateman the Yorkshire Witch* (Leeds: Edward Baines, [ca. 1810]) p.48; Robert Watt, *Bibliotheca Britannica.... Volume 2 Authors* (Edinburgh: printed for Archibald Constable and Company 1824), p. 620.

³⁵⁴ Lucas, *Inquiry*, p. 10.

professional Attainments'.³⁵⁵ Furthering one's medical knowledge by reading when in formal training attending lectures or walking the wards at either Edinburgh or London, was a useful occupation of a practitioner's leisure time; 'the perusal of books, on a subject to be discussed by a Professor, or by way of impressing on the memory of a Student, a lecture Lately heard, may usefully occupy a Pupil's leisure.'³⁵⁶

James Lucas regarded his apprenticeship and formal training in London as only the beginning of a lifetime's education in medicine. Reading became yet a more important method of furthering knowledge when a practising surgeon. Lucas advised that a surgeon-apothecary's leisure time in his early years of practice, should be spent keeping case notes and reading books:

A surgeon-apothecary in the beginning has usually much leisure which cannot better be employed than in preserving satisfactory references to the books he reads, and entering such observations as may assist his subsequent practice. [...] There are so many cases that turn out eventually curious and deserving remembrance, that a young surgeon-apothecary may derive great advantage, from keeping a detail of the daily progress of diseases in a separate book. As business multiplies a few hints on the leading signs of diseases, or the treatment recommended by the most approved writers may be collated, and so shortly noted, as that a small book may be sufficient to contain brief remarks on every disorder. When a habit of minuting the practice of others and the observations resulting from the experience is once acquired, it becomes easy, and the use of it seldom fails to render it a copious, and instructive work, encouraging its possessor to valuable communications.³⁵⁷

Such acts continued beyond the early years of a surgeon-apothecary's career. Earlier in this chapter we saw how even after fifty years in practice William Hey kept case histories, and in 1808 prepared for a potential operation on a strangulated hernia by reading Astley Cooper. Hey, Lucas and other practitioners continuously relied on medical publications for the latest advice and best practice in the field and reading these accounts was necessary preparation for surgeons prior to an operation, and in the aftercare of a patient. Lucas too regarded reading as particularly important when it came

³⁵⁵ Ibid., pp. 30; 32-33.

³⁵⁶ Ibid., p. 55.

³⁵⁷ Ibid., p. 113-114.

to assisting in the after-care of the patient.

In order to select all the information capable of being obtained, a reader must have patience to peruse the daily occurrences met with in books of cases; and to watch any hints he may find interspersed, or miscellany introduced, in surgical treatises.³⁵⁸

The extant records for Lucas are sparse in comparison to those of Hey, but his published work, combined with our knowledge of his membership of the medical library, and the extant case histories of James Peacocke, provides evidence for Lucas's reliance on reading printed literature to further his medical knowledge.

Lucas was one of the founding members of the Infirmary Medical Library. It is likely through this means that he accessed medical publications, although given that he donated a few items to the library, including John Hunter's *A Treatise on Venereal Disease* (entered into the library on June 29 1786) he may have had his own, small private collection of medical texts.³⁵⁹ One of the surgeons whose work Lucas relied on was Edward Alanson (1747-1823) of Liverpool, who published an account of *Practical Observations on Amputation and After-Treatment* (1779). Alanson, a friend of Lucas's, donated *Practical Observations* to the library and Lucas quickly applied the observations it contained to practice in the town. Knowledge of Lucas's application of Alanson's theories in Leeds comes from a series of casebooks maintained between by James Peacocke who was apothecary at the Infirmary between 1781 and 1785. Peacocke recorded a number of cases of patients who had been admitted to the Infirmary, including that of a patient requiring an amputation where James Lucas was the attending surgeon:

Aged 72 Esther Pearson of Sheffield was brought into the Hospital Novr 27th with Compound fracture of Both Legs, ... The operation was performed above Knee in the Manner recommended by Mr Alanson - two Ligatures were passed upon the great Artery

³⁵⁸ Ibid., p. 283.

³⁵⁹ Presumably Lucas had his own small private collection. He had for instance donated Rene Jacques Croissant de Garengot's *A treatise of chirurgical operations* (London: Woodward, 1723) to the library.

& the parts brought into contact by Strips of Sticking Plaister.³⁶⁰

Lucas was also familiar with the published accounts of a range of other medical authors. In 'An Account of a Singular Case' which Lucas sent to John Hunter, and was published in *Medical Observations and Inquiries* in 1773 (a journal the medical library subscribed to), Lucas recalled prescribing nitre to a patient suffering from haemoptoes [sic] on the basis of a paper he had read by Dr. Dickson, in the previous issue of the same journal: '(since I read that valuable paper of Dr. Dickson's)'.³⁶¹ In this instance, the act of reading an account by another medical practitioner, that of 'Observations on the Haemoptoë' by Thomas Dickson, a physician at the London Hospital, was a primary means by which Lucas was able to improve his own treatment of the patient, and contribute to the flowering of Georgian medical knowledge on this subject.³⁶² This examples also shows that Lucas (like Hey) was contributing to metropolitan medicine/surgery.

B. Apothecaries: The Carr Family

Supposedly the least learned of the medical practitioners in eighteenth-century Britain was the apothecary. An apothecary's medical education supposedly consisted solely of practical, on-the-job training: an apothecary learnt his trade through an apprenticeship in an apothecary's shop and was indentured to a master for a period of seven years. By the eighteenth century the apprentice apothecary in addition to his shop duties might also be expected to attend upon patients with his master. Only in the nineteenth century with the passing of the Apothecaries Act of 1815 did an apothecary require a license to practise, which required them to have undergone a medical

³⁶⁰ S.T. Anning, 'A medical case book: Leeds, 1781-84', *Medical History*, 28 (1984), 420-431, (p. 422).

³⁶¹ James Lucas, 'An Account of a Singular Case' *Medical Observations and Inquiries*, 5, (1783), 73-81, (p. 79).

³⁶² Thomas Dickson, 'Observations on the Haemoptoë, and upon riding on Horseback for the cure of a Phthisis' *Medical Observations and Inquiries vol. IV* (1772), 206-213.

education (and thus formal learning) and to have passed an oral examination.³⁶³ On the basis of this interpretation of the apothecary's training and subsequent practise in medicine it seems unlikely that many eighteenth-century apothecaries would have attempted to improve their medical knowledge, either by observation, keeping case-notes, or reading medical texts. In Leeds however, the town's apothecaries did just this. They, like the town's leading surgeons, maintained case notes, and read medical treatises with the intention of improving their medical knowledge and expertise.

A notebook belonging to William Carr (b.1715) contains various excerpts from medical publications written in 1739, long before the Infirmary was established in Leeds and the likes of William Hey and James Lucas could be found furthering their medical training in London, or forming medical libraries on their return to Leeds so they could access medical texts in order to maintain communications with the wider network of medical practitioners and stay up-to-date with medical developments. William Carr was the first of three generations of apothecaries of the same name to practise in Leeds. Each generation of the Carr family passed their knowledge of medicine on to the next verbally, and in writing. The notebook also includes entries by his son William Carr (1745-1821) and his grandson William Carr (1785-1861) whose entries date from 1800 and consist of excerpts from various volumes of that year's *Medical and Physical Journal* as well as other medical texts. The notebook also includes the signature of Carr's great-grandson William Carr FRCS (1828-1905).³⁶⁴

The largest of the entries inserted into the notebook by William Carr I, is that of a copy of the Pharmacopoeia of St. Guy's Hospital.³⁶⁵ Clearly, though, he had access to other medical texts, and copied excerpts from these works into the notebook. For example Carr, transcribed large sections of the *Medulla Medicine Universa* 'Wherein is contained in a direct summary way all that is essentially necessary, either with respect to

³⁶³ Loudon, *Medical Care*, pp. 39; 167-168.

³⁶⁴ London, Wellcome Library, MS 5203: Carr Family [Notebook. Kept by William Carr (b. 1715) from 1739] (87ff).

³⁶⁵ MS 5203: Carr Family, 'Pharmacopoeia noscomii Thoma Guy arm:.' (1v-22v).

Physick or Surgery, to answer every Medicinal intention of Cures'.³⁶⁶ In turn, he recorded various notes of methods of inoculating children for smallpox, including those of Dr Cookson, and James Douglas (these notes date from 22 February 1752), and copied the uses of 'Vitrum Cerat antimony' from 'Med. Epopys vol. 5th' [sic]:

In the angina when the patient complains of the extreme difficulty of swallowing even a spoonful of any liquid; it is proper to recommend him to drink a good large draught: because there is as much if not more pain occasioned by the attempt to swallow a mere ten spoonful than half a pint.³⁶⁷

His son William Carr (1745-1821) also maintained a private notebook. Carr junior was apothecary at the Infirmary between 1774 and 1780 and his notes reflect his experiences whilst in this role.³⁶⁸ The notebook contains a note on which apparatus should be used for amputations dating from July 1774 when he first joined as Infirmary Apothecary, and various notes on medical cases and treatments. Importantly, it also contains a number of extracts from eighteenth-century texts. In Carr's case, however, his reading was that of a scholar, rather than practical in nature and seemingly reflected the more liberal reading tastes of medical men elsewhere in the north of England in this period.³⁶⁹ His preference was for polite literature, and something of his interest in this sort of literature can be ascertained from his own private library which contained works by Blackstone and More. Carr noted that 'Blackstone in a notebook quotes a passage from More's *Utopia* p.21 & 39 & 52, ch. 17 the edition Glasg. 1750 p. 21'. Carr owned a copy of More's *Utopia* and was delighted to discover it was that same edition 'Qu. Is my Glasgow's edition of More's *Utopia* of that year? Yes!'.³⁷⁰ Carr's notebook, while not revealing much about the practical reading habits of an apothecary, does at least reflect the private borrowing that occurred among individuals in the eighteenth century; for instance he borrowed Johann van Egmont's *Travels* (1759) from 'Mr. Wilkinson of gldsom

³⁶⁶ 'Medulla Medicine Universa', *Ibid.*, 25v-32v.

³⁶⁷ *Ibid.*, 'Dr Cookson's Method of Inoculating Children for the Smallpox' 32r-33v; 'Dr. Ja. Douglas Method of Inoculating for the Small Pox' 33r-34r; 'Vitrum Cerat antimony Med. Epopys vol. 5th' 34v.

³⁶⁸ London, Wellcome Library MS 5204: Carr Family [Notebook. Kept by William Carr (1745-1821)], (46ff).

³⁶⁹ See Michael Brown, *Performing Medicine*, pp. 48-49.

³⁷⁰ MS 5204: Carr Family, 14v.

[sic] street’.

C. James Peacocke

Earlier in this chapter I discussed how our knowledge of James Lucas’s reading habits came from an extant case history of James Peacocke. Peacocke was an apothecary, who maintained case histories of patients at the Infirmary. Between 1781 and 1784 whilst Peacocke was employed as apothecary at the Infirmary he recorded 122 case histories of its patients, of which only ten are extant today.³⁷¹ As one would expect, the case histories recorded by Peacocke were those of a personal, professional interest, rather than a comprehensive list of all the patients treated in the Infirmary.³⁷² The cases include accounts of patients needing amputations, suffering from Bronchocoele—goitre, hydrocele, and infections, as well as the methods of treatment pursued by the various members of the Faculty of the Infirmary.

Peacocke’s notes suggest that he was present at each case he recorded, and that he had a vast knowledge of the disorders suffered by each patient. He made frequent reference to the theories of medical practitioners outside of Leeds, practitioners including Percival Pott and Bradford Wilmer, alongside Edward Alanson (whom he mentioned in regard to James Lucas). Some of this information may have been gained from observing the member of the Faculty in attendance, hearing their mention of the said practitioner and recording this information on paper for future reference. But given that Peacocke often mentioned medical treatises in relation to these practitioners, and that in his role of apothecary he was acting librarian of the Infirmary Medical Library, it is likely that he had actively read their works, and was thus versed in the latest medical knowledge in Georgian England. For instance, in the case of a patient suffering from Bronchocoele-goitre outlined below, which was treated by the surgeon Mr Strother,

³⁷¹ S.T. Anning published an article on ten of the case histories in 1984 and was in possession of a Photostat copy of all 122 of Peacocke’s case histories, based on the original manuscript notebook (281pp). The Photostat was provided to Anning by Mr. John A. Shepherd, FRCS, and archivist at the Liverpool Medical Institution but there is no longer any trace of the notebook in the Medical Institution’s archives.

³⁷² Anning, ‘Case book’, p. 420.

Peacocke copied the method of treatment directly from Bradford Wilmer's recently published *Cases and Remarks in Surgery* (1779), an octavo edition of which featured in the medical library's collection by 1784 when its catalogue was published:

John Carrol Act 36 a Soldier was admitted 13 June for a Bronchocoele [goitre] which was very large; he was a stout healthy man of robust temperament and free from any other Complaints. [...] He has no difficulty in Swallowing, can rest well at night & breathes very freely – The method recommended by Mr Wilmer (in his *Cases in Surgery*) for the Cure of the Bronchocoele was put in practice as the most advisable plan; tho the Case was an unfavourable one being of so long a Date and withal of so great an extent. The Method and rules laid down by Mr Wilmer, are briefly as follows: The day after the Moon hath been in the full, the Patient is to take a vomit. On the Succeeding Day a purge is to be administered. On the Third night, going to Bed, one of the Following Boluses is to be placed in the mouth under the tongue, and being suffered to dissolve gradually, is to be swallowed.³⁷³

Peacocke's case notes also indicate that for an apothecary, just as for a surgeon, observation was an important means of building expertise on the treatment of cases. Peacocke also used the case histories as an opportunity to question whether the method of treatment used on a patient was the best method of cure, a method he may have observed from William Hey, who as we saw earlier, included such discursive comments in some of his case histories. Hey was the consulting surgeon on the known case on which Peacocke makes such comment: in the case of a patient suffering from tetanus as a result of a wound to the finger, following his usual case history, Peacocke recorded a further observation, wondering whether the patient's finger should have been amputated immediately upon the appearance of the symptoms of tetanus. Peacocke's discussion of this question reveals a startling knowledge of American medical practice. In it, he cites *An essay on fevers* (1768) by Lionel Chalmers (1715-1777), a physician in Charlestown:

Geo. Saville. Aet. 18 Was brought to the Hospital Augt 20th 1783 with a lock'd jaw from a Wound in the little finger which he received by a sickle in the Shearing about 12 Days ago.

...

N.B. Would an Immediate Amputation of the Finger upon the first appearance of the Symptoms have lessened their violence or conduced to his recovery.

The liberal use of Mercurial friction was to produce a Ptyalism as early as possible is

³⁷³ Ibid., p. 426.

strongly recommended and exemplified in twelve or more of the Tetanico and Opisthotones related by Dr Chalmers of Charlestown, all of which were successfully treated. He prefers this to the most powerful medicines known and remarks that this method answered when every other means failed – The cases he relates were none of them produced from Wounds or after Capital Operations.³⁷⁴

Peacocke's knowledge in this instance once again resulted from his reading of a medical text. A bound copy of the two volumes of Chalmer's *An essay on fevers* was present in the Infirmary's Medical Library, and Peacocke presumably read it in the Infirmary following his observation of this patient's treatment.³⁷⁵ Peacocke's case histories hence reflect the wide variety of activities undertaken by an apothecary in the eighteenth century. So too, do they demonstrate (in line with recent advances in the historiography) that apothecaries did more than simply prepare prescriptions for patients.

5.5 Conclusion

This chapter has established that reading was an important means by which Leeds's eighteenth-century surgeons and apothecaries kept abreast of the latest medical and surgical developments. This chapter has further emphasised the significance of the Infirmary Medical Library in Leeds, and how its collections were utilised by the medical establishment in the town. The Library meant that the town's practitioners had access to medical texts that they could not have afforded as individual subscribers. It has shown too, that medical journals were a key means by which new medical knowledge was communicated in the late Georgian era, and that these journals were utilised by Leeds's medical practitioners. These practitioners relied on the contents of the medical journals for the latest knowledge about new medical techniques, and, as the examples of Hey and Lucas illustrate, also contributed to the flowering of medical knowledge by sending their own cases to the societies who operated these journals for inclusion in publication.

³⁷⁴ Ibid., p. 429-431.

³⁷⁵ 'Chalmers on the Diseases of South Carolina', *Medical-Library at Leeds*; p. 8.

Chapter 6

The Reading Habits of Manufacturers in Georgian Leeds: The Quest for Practical Knowledge

What similarities were there between medical men and merchant-manufacturers in Leeds in the late Georgian period? In relation to their use of books and other printed matter to improve knowledge, many, as will become apparent in this chapter. The core argument in chapter five was that medical men needed to read for professional purposes, and used the Leeds libraries to do so. They utilised the collections of the Medical Library in order to improve their professional knowledge and apply such knowledge to practice in Leeds. In the early nineteenth century, manufacturers too, were utilising the collections of the Leeds Libraries to inform their manufacturing enterprises, and improve the technology and machinery in their factories. By this date, as we saw in chapter four, the merchant-manufacturers had come to dominate membership of the Leeds libraries, and the collections of the libraries had come to include literature and the arts on one hand, and subjects relevant to the needs of manufacturers; natural philosophy, chemistry and the mechanical arts on the other.

Historians of science and technology argue that the roots of industrialisation lay among enterprising industrialists possessed of ‘scientific and technical knowledge’, and economic historians have claimed that there was an enlightened knowledge economy in Britain in the industrial period.³⁷⁶ As I outlined in chapter one, Margaret Jacob argues that manufacturers such as John Marshall and Benjamin Gott who led the push towards industrialisation in Leeds were both scientifically and technically literate.³⁷⁷ Jacob claims they possessed a ‘cultural vocabulary’ of science that was acquired predominantly through attendance at natural philosophy lectures, although she mentions too that

³⁷⁶ Musson and Robinson ‘Science and Industry’, p. 244; Mokyr, *Enlightened Economy; Gifts of Athena*.

³⁷⁷Jacob, ‘Mechanical Science’; idem, *Knowledge Economy*.

Marshall and Gott were well-versed in the latest published scientific literature, including work on chemistry direct from the continent. The question that arises in response to this claim, is where and how in Leeds were the industrialists able to obtain and access works of scientific literature?

This chapter explores and demonstrates the extent and importance of reading among Leeds's merchant-manufacturing community. It argues that in Leeds reading was an important practice among manufacturers of the industrial revolution. It examines the pivotal role of the Leeds libraries in enabling access to books and literature that were otherwise beyond the means of many early manufacturers in the town in the late eighteenth century. It shows that the involvement of merchant-manufacturers in the Leeds libraries was necessitated by the practical and professional concerns of their shift to mechanisation, and their need to access what Jonathan Topham describes as 'books for working'.³⁷⁸

I use the detailed example of one manufacturer to show that reading was an important means by which manufacturers acquired technical and scientific knowledge in the eighteenth century. The study of John Marshall, a dissenting draper turned manufacturer of linen analyses his extensive personal and business manuscripts, provides evidence of his efforts to manufacture linen in Leeds, and builds upon Jacob's recognition of his technical abilities and scientific experimentation. Marshall, as we shall see, employed a combination of reading, experimentation and discussion with his fellow manufacturers to improve the performance at his factory. I then turn to see how he accessed scientific knowledge in printed format, and examine his membership of the Leeds Libraries to argue that the collections of the libraries formed the primary means by which he was able to access scientific literature. The final section of the chapter seeks to show that there is some evidence that Marshall is not wholly unrepresentative and that reading mattered to manufacturers. I analyse the personal and business records of Benjamin Gott, a merchant turned wool manufacturer, and an Anglican-Tory

³⁷⁸ Topham, 'Why the History of Science Matters to Book History'.

in contrast with the dissenting Whig Marshall, and argue that Gott too employed scientific and technical knowledge acquired by reading to the process of industrialisation in his factory.

6.1 John Marshall (1765-1845): Scientific Reading, Self-Education and Manufacturing

John Marshall was a leading figure in the transformation of Leeds from a merchant town in the late eighteenth century to a centre of industrial manufacture by the nineteenth century. The Egyptian-style Temple Mills in Leeds, with its mill room measuring 396 feet long by 216 feet wide, today stands as testimony in Temple Street to Marshall's instrumental role in Leeds's manufacturing history and in changing the face of the town. The mill was built between 1838 and 1840, toward the end of Marshall's lengthy career as a manufacturer, at a time in which he predominantly resided away from Leeds at his private house Hallsteads in the Lake District. It is for this mill, his career as a politician (he was MP for Leeds between 1826 and 1830), and his philanthropic activities—Marshall contributed heavily to the establishment the Leeds Philosophical and Literary Society (1819), and the Mechanics Institute (1824)—that he is best recognised in the annals of Leeds. In this chapter I seek to show a different side to Marshall, one that is frequently overlooked by historians.

Through extensive analysis of the extant business records of John Marshall, including his private notebooks, experiment books, and ledgers, the chapter will recreate the struggles experienced by a young John Marshall, as he sought to exploit recent developments in the production of flax spinning and enter trade as a manufacturer. It builds upon the work of historian of science Margaret Jacob who, as mentioned, has highlighted John Marshall's role in the early Leeds manufacturing scene. I assess the processes by which the young Marshall, a merchant, came to acquire a working knowledge of manufacturing that led him to become one of Leeds's most prolific manufacturers. I show that Marshall spent a number of years experimenting on the best mode of manufacturing flax, and learnt the trade through a combination of

practical application of knowledge he learnt by attendance at natural philosophy lectures (which Jacob has explored in detail), discussion with other manufacturers, and reading upon the subject. In particular, it is this act, the act of reading and applying this knowledge to practice which is of primary focus in this chapter. I will show that John Marshall acquired a scientific and technical knowledge of the processes of manufacturing by reading printed matter and that this contributed to his ability to manufacture flax on an industrial scale. It was through his membership of the Leeds Subscription Libraries (which as I showed in chapter four contained scientific literature amongst their collections relevant to manufacturers interests) that John Marshall was able to acquire a scientific vocabulary in Leeds, and access what Jacob has described as the latest scientific literature as it appeared in print.

The first section briefly outlines John Marshall's early life, and education, before turning to his training for a career as a merchant-draper. I show how the inheritance of the family linen business in 1787 was a turning point in Marshall's life, and the point at which he invested resources into learning the trade of manufacturing. The analysis then turns to his first introductory steps into the field of manufacturing as he sought to mechanise the process of flax spinning and adapt machinery for this purpose. We see how he initiated a series of practical experiments in his attempt at mechanisation, before turning to others for help with this process. We then examine Marshall's secondary experiments on the bleaching and dyeing of linen. In these experiments Marshall used a combination of communication with manufacturers and the reading of scientific periodicals to gather the latest information about advances in technology and scientific technique relative to his own interests in bleaching. This section evidences that reading was an important means by which he acquired a practical knowledge of applied chemistry. The final section on Marshall examines further the sorts of material he was reading during his experiments on bleaching. It argues that he obtained much of the material necessary for experimentation from the Leeds libraries with their collections geared towards members with scientific interests.

A. Education and Early Forays into Manufacturing

John Marshall was born in Leeds in 1765, the son of one of the earliest subscribers to the Leeds Library, the linen draper Jeremiah Marshall (1731-1787), a Unitarian, and Mary Cowper (1728-1799).³⁷⁹ Marshall was literate from a young age, and introduced to improvement, knowledge and books by his maternal aunt Sarah Book with whom he went to live in Rawdon, following a bout of smallpox aged five. Marshall described Booth as 'A woman of uncommon strength of understanding, correct judgement [...] she made a companion of me though a child. We read everything together, which gave an interest to our books and gave me a thirst after improvement and knowledge, which in a young mind is so essential for future usefulness'.³⁸⁰ Marshall's formal education began at the local meeting house where he took lessons from its minister, he then went to the local Grammar School in Rawdon (probably around the age of nine) where he gained an education in the classical languages. Aged eleven he was sent to Hipperholme School (two miles distant from Halifax) for eighteen months where he continued his classical education before spending a further eighteen months at a private school with Mr Astley in Derbyshire, where he developed a taste for 'general knowledge and literature'. Following the completion of his formal education Marshall returned to Leeds and began preparing for life as a merchant. There he learnt

³⁷⁹ Jeremiah Marshall subscribed to the library on 19 September 1768. Leeds Library: Share Register of the Leeds Library 1768. The family's origins can be traced to the seventeenth century. They were prominent in Yeadon in the parish of Guiseley some seven miles outside of Leeds. John Marshall's paternal grandfather by the same name (1661-1745) was prolific in improving that vicinity. In 1703 he founded a school in the town and in 1712 also helped to establish a Baptist meeting house. For more information on the Marshall family background and for a genealogical table see W.G. Rimmer, *Marshalls of Leeds: Flax-Spinners, 1788-1886* (Cambridge: Cambridge University Press, 1960), pp. 11-13.

³⁸⁰ Marshall's 'My Life', p.2. cited in Rimmer, *Marshalls*, p. 21. No full extant copy of the manuscript Marshall's 'My Life' survives, although some excerpts are extant in the Brotherton Library, University of Leeds. Leeds, Special Collections, Brotherton Library, MS 200/14/7 'Extracted from J M's sketch of his life...'

French and accounting at one of the private schools that had sprung up in the town, and aged seventeen, in 1782, entered into the family drapery business.³⁸¹

The drapery business operated from a shop at No. 1 Briggate and dealt in Irish linen.³⁸² With a good education behind him John Marshall quickly showed promise and took on responsibility in the firm. At the age of nineteen in 1784 he supervised the building of the firm's new warehouse at Mill Hill and the following year visited Ireland carrying out business on behalf of the firm.³⁸³ When his father died unexpectedly of a stroke two years later, Marshall was in a good position to take over management of the drapery business. Aged twenty-two, on the occasion of Jeremiah Marshall's death in 1787, John Marshall inherited his father's £9000 estate and, became the controlling partner in the firm.³⁸⁴ Annual turnover of the business was the considerable sum of £1,000, which after household expenses left Marshall with £500.³⁸⁵

Immediately upon inheriting his father's share in the firm John Marshall set about improving the capacity of the business. One feasible way of improving capacity was to manufacture the linen the firm sold. In 1768 Richard Arkwright had patented a spinning frame and carding engine which had made it possible for those in the cotton industry to manufacture cotton on an industrial scale for almost two decades. In 1785 Arkwright's patent for spinning machines had lapsed allowing others to develop and adapt his designs. Shortly before Marshall inherited in 1787 two men from Darlington, John Kendrew, optician and Thomas Porthouse, clockmaker, succeeded in adapting Arkwright's water frame for the process of spinning materials other than cotton, and

³⁸¹Rimmer, *Marshalls* p. 14.

³⁸² *Ibid.*, p. 13.

³⁸³ *Ibid.*, p. 22.

³⁸⁴ *Ibid.*, p. 22.

³⁸⁵ Equivalent to £56,030 in today's money. <http://www.nationalarchives.gov.uk/currency/>

patented 'a mill or machine, upon new principles, for spinning yarn from hemp, tow, Flax, or wool'.³⁸⁶

With free rein of the drapery business John Marshall seized the opportunity to expand from selling cloth to customers and being the final point in the production line, to controlling the entire manufacturing process; producing the cloth the firm sold. Within a month of his father's death Marshall, in a set of deliberate and co-ordinated actions, visited the inventors in Darlington and secured a licence from them to try out their new spinning machine in return for a share of the royalties (it is unclear how he gained knowledge of this invention). He also enlisted two partners, Samuel Fenton and Ralph Dearlove, to secure capital to purchase the lease on a mill at Adel (Scotland Mill, lease signed on 5 January 1788) where he would attempt to manufacture linen from flax.³⁸⁷ Marshall's aim was to spin better quality and lighter weight yarn than the local hand-spinners (thus displacing their market) and to achieve this at a cheaper price. The mill at Adel, 'a new erected water mill called Scotland Mill together with two closes of land' was leased from James Whitely, a dyer, for thirty-three years at an annual rate of £109, with an escape clause that allowed the lease to be dissolved after three years. At five miles distant from Leeds, in a secluded spot, with power from water wheels, the Darlington machinery, and with the get-out clause, the lease on Scotland Mill allowed John Marshall three years to experiment on the feasibility of manufacturing linen. The first attempts at spinning yarn from linen proved problematic. The yarn produced was of poor quality, and the Darlington drawing frame needed improvement if the venture was

³⁸⁶ Alex J. Warden, *The Linen Trade, Ancient and Modern* (1864, repr. Abingdon: Frank Cass, 1967) p. 691. The invention by Kendrew and Porthouse introduced a twenty-inch cylinder between retaining & drawing vs. contractor at drawing.

³⁸⁷ Samuel Fenton, was Marshall's cousin and an existing partner in the firm. He had joined the drapery business as a junior partner in 1785. He invested £2000 in Marshall's new project gaining a quarter share of the profits. Ralph Dearlove was a linen merchant from Knaresborough, and may have been brought into the partnership because of his merchant contacts and knowledge of the linen distribution networks. Dearlove advanced £700 and gained a fifteenth share in the business.

to prove successful.³⁸⁸ In June 1788 Marshall thus began to experiment on the machinery himself.³⁸⁹

In this early period of experimentation John Marshall depended on his own initiative, rather than published sources of knowledge. In the months between June and October Marshall undertook seventeen experiments on the process of spinning. These experiments concentrated on modifying the Darlington machinery by altering the distance of the rollers of the drawing frame and inserting carding rollers, but when on 11 September 1788 he ‘began to try the [tow] machinery at the mill’, the result remained uneven.³⁹⁰ Marshall abandoned these experiments on 11 October 1788 having learnt that:

Flax will not spin with rollers the common way because the fibre will not stick together so much as to hand forward from one roller to another especially at such distances as the length of fibre requires them to be [...] It will be best spun from a sliver drawn from the heckle in the same manner as worsted if that be practicable.³⁹¹

Marshall instead turned his attention to weaving, and in December 1788 installed four of Edmund Cartwright’s newly patented power looms at Scotland Mill.³⁹² When Marshall returned to his experiments on spinning in June 1789 he made more headway. His aim was to improve the linen yarn produced at the Scotland Mill. To achieve this aim, his first

³⁸⁸ The drawing frames could not reduce tow, there were breakages and rather than the medium-light yarns that Marshall hoped to achieve, only heavy (5-7 lea) yarns could be spun: linen yarns are measured in terms of lea, each lea being 300 yards. Marshall’s yarns, with a size of 5-7 lea, would give 1500 - 2100 yards per pound. Rimmer, *Marshall*, pp. 26-27.

³⁸⁹ Leeds, Special Collections, Brotherton Library, 200/53 Notebook of experiments on spinning tow from June to October 1788, and other experiments on spinning and weaving, December 1788 and June 1790.

³⁹⁰ Among some of the problems Murray faced was that ‘the card roller would not turn out the cardings from the box.’ MS 200/53 Spinning Tow, 8r.

³⁹¹ *Ibid.*, 9v.

³⁹² Between 1785 and 1788 Edmund Cartwright had taken out four power loom patents. In 1787 he set up a factory at Doncaster with twenty looms, including one for weaving coarse linens. It was this loom that Marshall installed four of in Leeds. Although as he later reported they were ‘very liable to be out of order [...] in part owing to the bad business of the workmanship’, and his weavers only produced about three pieces per week. MS 200/53, December 1788.

experiment involved replacing the damp cloth (a feature of the Darlington frame) with a pair of rollers which wet the sliver. It proved partially successful; 'the sliver was made evener [...] smoother' but the yarn often broke.³⁹³ At this stage, Marshall began to seek other help. On 15 July 1789 he returned to Darlington and visited Porthouse at Coatham Mill. By this date Porthouse had also converted a carding engine 'a machine for combing or cleansing wool or cotton, in which a large cylinder set with cards works in connection with smaller cylinders and a hollow shell similarly set with cards' for the purposes of flax spinning and Marshall was given access to it, although he recorded that it 'failed to doff the sliver'.³⁹⁴ On the basis of this visit, Marshall attempted a similar experiment when he returned to Leeds in August 1789. Now though, rather than working alone, he sought the advice of others as he entered into his second phase of experimentation which involved collaboration with others.

In another planned and co-ordinated action John Marshall hired a young engineer Matthew Murray to help with his experiments. Matthew Murray (1765 – 1826) went on to become a pioneering manufacturer and developer of steam engines but initially started out undertaking mechanical experiments for Marshall. Murray had important technical knowledge and understanding that John Marshall needed. Following apprenticeship as a millwright, Murray had worked as a mechanic in Stockton-on-Tees producing and repairing machines for Kendrew and Porthouse, the very men from whom Marshall had licensed a spinning frame.³⁹⁵ Murray's technical knowledge was

³⁹³ 'Experiment of wetting the Yarn by apr [sic] Roller before the fluted roller before it was twined June 1789'. MS 200/53 June 1789.

³⁹⁴ Rimmer, *Marshalls* p. 28 In 1748 Lewis Paul invented a hand driven carding machine. The devise involved a card covered with slips of wire placed round a cylinder. Richard Arkwright made improvements in this machine and in 1775 took out a patent for a new Carding Engine. Arkwright's machine included a cylinder carding engine, incorporating a crank and comb mechanism. The comb moved up and down, removing the carded fibres from the doffing cylinder in a "continuous filmy fleece".

³⁹⁵ Matthew Murray was born in Newcastle-upon-Tyne in 1765 before being apprenticed as a millwright. In 1788 he moved to Leeds, quickly rising through the ranks.

http://www.leodis.net/discovery/discovery.asp?page=2003219_348858059&topic=200335_73055447&subsection=2003724_663265408&subsubsection=2003911_425319851 accessed on

essential to the success of the firm, and instantly began yielding results. Marshall set Murray to work on a new loom. Unlike the loom patented by Cartwright and purchased by Marshall which used wheels, Murray's loom used pulleys with an instantaneous result: 'the pullies [...] were not liable to break the shuttles like the wheels'.³⁹⁶ In January 1790 experimentation began again in earnest on the preparation of long tow.³⁹⁷ It was Murray who appears to have suggested returning to the hackle roller as the unevenness of the sliver which was the cause of their trouble. Marshall noted: 'MM [Matthew Murray] thought was occasioned by the tunnel conducting it [long tow] to the roller being too straight for it to get through.'³⁹⁸ By the end of February the pair were making progress enough to contemplate experiments on spinning again.

In February 1790, Marshall sent Matthew Murray into Cheshire to 'enquire into their mode of spinning worsted by pincers'. Although Murray was not granted access to any mills he was able to gain valuable information about the process which impacted upon their future experiments. Murray was told for instance 'that the pincers did not let the twine run up from the spindle'. As a result, they reverted to the 'old plan of drawing and turning at the same time'.³⁹⁹ By 5 April 1790 they had made a new drawing frame 'with the delivery rollers working at right angles'. This machine meant Marshall could produce lighter yarns and Murray patented it on 1 June 1790.

05.07.2013. See also, Ernest Kilburn Scott *Matthew Murray, pioneer engineer : records from 1765 to 1826* (Leeds: E. Jowett Ltd, 1928).

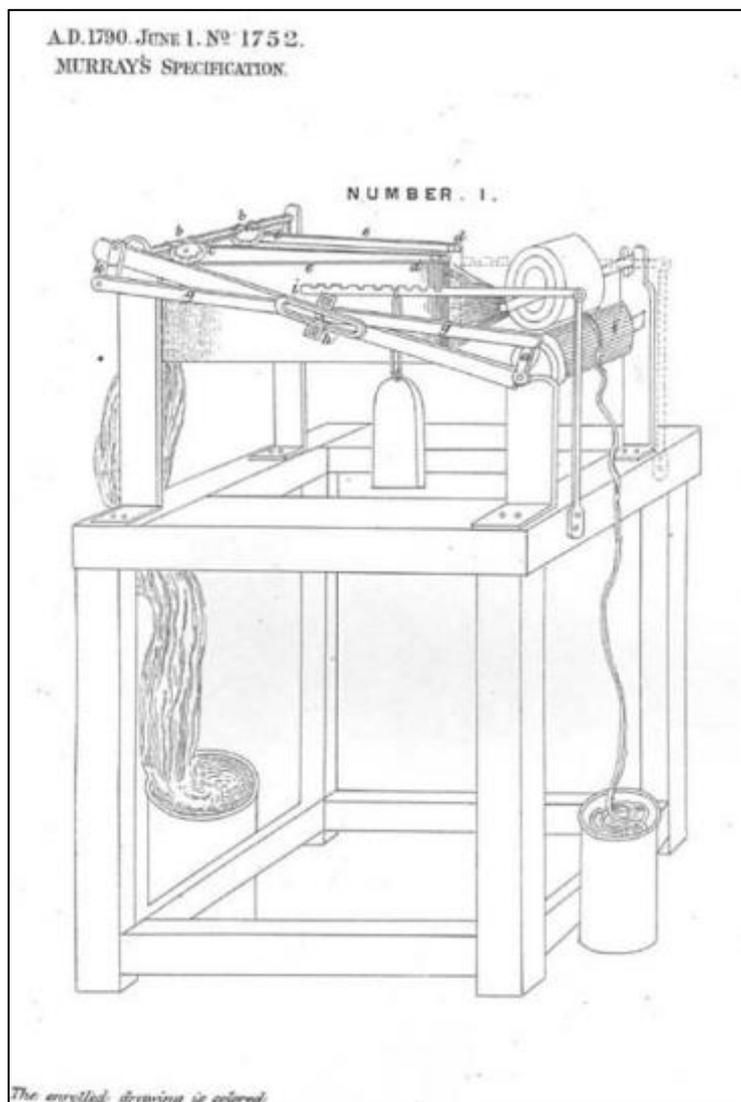
³⁹⁶ MS 200/53 Vol. 1 Spinning and Weaving September 1789. Murray went on to patent this invention in June 1790.

³⁹⁷ Originally the pair tried using a carding machine only to return to a hackle roller again MS 200/53 February 1790.

³⁹⁸ MS 200/53 January 1790 'Begin experiments on Long Tow'.

³⁹⁹ MS 200/53 'Experiment Number Three on Long Tow February 1790'; Marshall recorded this event in his notebook on 20 February 1790.

Figure 6.1: Matthew Murray's Patent Diagram for a Yarn Spinning Machine (1790)



Source: www.mylearning.org

The pair then turned to experimenting on Porthouse's carding machine.⁴⁰⁰ Within a year, Murray had designed a satisfactory carding machine—another major technical breakthrough in mechanising the production of flax into linen.

B. Lectures on Natural Philosophy

In the interim period between Marshall's patent in June 1790 and the new carding machine in 1791, Marshall sought to advance his scientific knowledge of the principles of natural philosophy and chemistry on which certain of his manufacturing processes depended. In December 1790, John Marshall attended a series of lectures on topics including natural and experimental philosophy, pneumatics, hydraulics, pneumatic chemistry, astronomy, mechanics [sic] and optics.⁴⁰¹ The series of fifteen lectures were given by John Booth at Mr Hodgson's Academy on the Upper Headrow.⁴⁰² Although the lectures Marshall attended were a general course of lectures in natural philosophy, by 1802 lecturers in the field were deliberately directing their lessons to manufacturers, advertising their lectures as follows: 'the steam engine [...] cannot be understood without the previous explanation of Mechanics, Hydrostatics, and

⁴⁰⁰ Ralph Dearlove (Marshall's partner) was involved in at least one experiment. In June 1790 he 'tried an experiment of drawing sliver of long tow from wool comb'. MS 200/53 Spinning Tow, Experiment 16. For the experiments on Porthouse's Carding Machine, see Leeds, Brotherton Library, MS 200/54 Notebook of experiments on spinning, July 1790 to June 1801.

⁴⁰¹ This lecture series was advertised in the *Leeds Intelligencer* on 14 December 1790. Presumably Marshall was one of forty subscribers who chose to sign up to 'Booth's course of lectures on natural and experimental philosophy, astronomy, chemistry...'. *LI*, xxxviii, no. 1894 (14 December 1790). Marshall went onto attend another series of lectures in 1804 when he attended Waltis's Chemical Lectures. Leeds, Brotherton Library, MS 200/42, 200/42 Notes on Booth's Philosophical Lectures, 20v.

⁴⁰² Margaret Jacob claims that the Booth mentioned in Marshall's notebook was most likely Benjamin Booth, an itinerant science lecturer and a follower of Joseph Priestley. A radical, Booth was one of a number of men linked with scientific and radical circles in Manchester who faced charges of high treason in 1793 for distributing a paper on war in that town. He was sentenced to twelve months imprisonment which he served at Lancaster Gaol and was released on 25th April 1794. *The Whole Proceedings on the Trial: Tried at the Assizes at Lancaster, April 2, 1794, Before the Hon. Mr. Justice Heath*, (T. Boden, 1794), pp. 129-134. Jacob, 'Mechanical Science', pp. 203-204; 220.; Eric Robinson, 'An English Jacobin: James Watt, Junior, 1769-1848', *Cambridge Historical Journal*, xi (1955), 349-55 pp.353-355. However on reflection it is far more likely that it is the John Booth featured in Ian Inkster's 'Culture, Institutions and Urbanity'.

Pneumatics'. The Newtonian education he received from Booth provided Marshall with the lessons necessary for a greater understanding of the mechanic arts.⁴⁰³ His attendance at these lectures further cemented his shift from draper to a scientifically and technically knowledgeable manufacturer.

The period of his attendance at these lectures was highly significant in the overall context of Marshall's intellectual and manufacturing development. Turning now to Marshall's other experiments, including those on bleaching, we will see that the methods and knowledge acquired at these lectures were applied to the factory floor with the aid of other sources of knowledge, including printed matter.

6.2 John Marshall: Printed Matter and Experiments on Bleaching

In September 1791 Marshall moved to a new purpose-built mill on Water Lane in Leeds. At Water Lane, he began to experiment on the dyeing of linen, a process he recorded in his notebook 'Experiments on Bleaching'. Unlike his first series of experiments the second phase of experimentation was reliant on printed matter. The more Marshall began to experiment, the more he was drawn into scientific reading. We shall see that his experiment books are full of references to the latest literature on chemistry. This section likewise evidences how Marshall learnt from his previous phase of experimentation, in that he utilised a practical and learned approach to achieve the maximum potential from his bleaching venture. In this series of experiments, Marshall deployed the information he had learnt at Booth's lectures on natural philosophy, in combination with a process that involved reading scientific literature, practical experimentation and discussion with other manufacturers (a technique he had first utilised when mechanising the process of flax spinning).

⁴⁰³Jacob, 'Mechanical Science', p. 202. Marshall certainly gained a knowledge of Newtonian mathematics at Booth's lectures to add to his own prior knowledge – in addition to his notes on Booth's lectures on astronomy, Marshall also recorded that '*Newton* attributed the tide on the opposite side of the earth from the moon to the solid part of the earth being more attracted than the water on the opposite tide & being as it were drawn away from it'. MS 200/42 Lectures, 7r.

Figure 6.2: The Contents Page of John Marshall's Notebook of Experiments on Bleaching, 1797 to 1802

Contents		Page
1797	Wigan bleaching	1
	— Blethollet on muriatic acid	2
	— Extract from Encyclopedie Methodique	19
	— Directions from Ainsworth & Vallat	20
1798	Exp ^s with Ainsworth's liquor	21
	— Home's tests of alkalis	23
	— Sundry Exps with mur. acid	26
	— Lavoisier on — D ^o	32
	— Rupp — on — D ^o	33
	— Curry on carbonated alkalis	35
1799	Comparison of Knarsbro' bleaching	37
	— Pajot de Charmes on mur. acid	40
	— Our exp ^s under Mr Vallat's direction	44
1800	Chaptal's acct of Vapour bleaching	51
	— Our exp ^s for Suffolk color	54
	— Tennant's bleaching powder	57
	— Horridy's lime process	59
	— Turnbull's vapour bleaching	61
1802	Our exp ^s on D ^o	63
	— About proportions of salt &c	72
	— Using old liquor for cisterns	"
	— Cost of Suffolk color	73

Source: MS 200/55 Notebook of experiments on bleaching, 1797 to 1802. Reproduced with the permission of Special Collections, Leeds University Library.

In the year 1796 Marshall purchased a bleaching works at Wortley. In that year the firm's linen yarn output was at an all-time high, but at the other end of production, the bleaching of linen (the final process of production) was threatening to become a bottleneck on production.⁴⁰⁴ At this time the firm used a natural bleaching method which had come into usage in the mediaeval period, and which Marshall had

⁴⁰⁴ Ibid., pp.50-51.

implemented in 1788. The yarn produced from the spinning and weaving process was bleached with 'lye water' made from boiled potash and river water and then laid out on a bleaching green in the sun for several months until the bleaching process was complete.⁴⁰⁵ Marshall thus needed to reduce the time associated with the bleaching method the firm used. For this reason he purchased the bleaching works to provide more space to bleach the linen he was producing, and with the aim of experimenting on the process of bleaching in order to quicken the process of production. It took another year and a half before he physically began experimenting. In the meantime, he sought out expert knowledge and resources.

When Marshall purchased the bleaching works in 1796, he already had a basic understanding of chemistry and bleaching techniques which he had gained from attending Booth's lectures on natural philosophy. As we saw earlier in this chapter, these lectures encompassed far more than natural philosophy and during his attendance at lecture ten, on the topic of 'pneumatic chemistry' Marshall learnt the latest knowledge about the bleaching properties of chemical substances. In his notebook 'Booth's Philosophical Lectures' he recorded one of the most important pieces of information he would need to experiment on bleaching:

Phlogisticated marine acid discharges all the colours from vegetable substances – **this is the new invention for bleaching which whitens a piece of cloth in a few hours** – it is procured by putting oil of vitriol on sea salt which separates the acid of salt – then by adding some blue shale or manganese – so commonly used in cleaning hearths &c. which contains a large quantity of vital air, the acid will extract from its vital air & will then be dephlogisticated & fit for use.⁴⁰⁶

The 'new invention for bleaching' described in Marshall's notebook was otherwise known as 'dephlogisticated muriatic acid'. This gas with bleaching properties (today known as chlorine) had been discovered in 1774 by the Swedish chemist Carl Scheele

⁴⁰⁵ Ibid., p.51. Upon acquiring the firm in 1788 John Marshall had briefly experimented with adding quick lime to the boiled potash and river water 'stirring it till the water had got saturated', but did not go on to apply this method on an industrial scale. Leeds, Brotherton Library, MS 200/55 Notebook of experiments on bleaching, 1797 to 1802, 2v.

⁴⁰⁶ Emphasis mine. MS 200/42 Lectures, 13r-14r; On vitriol see, Archibald Clow and Nan. L. Clow, 'Vitriol in the Industrial Revolution', *Economic History Review*, 15 (1945), 45-55.

(1742-1786). In 1790 when he learnt this vital piece of information, Marshall immediately expanded his knowledge of the invention by going directly to the source. Scheele's discovery had come to England in printed format; in 1786 Scheele's *Chemical Essays* had been translated into English from the *Transactions of the Academy of Sciences at Stockholm*.⁴⁰⁷ Marshall obtained and read a copy of this translation and transcribed a passage from page ninety-two of the *Essays*, 'On Manganese – Expt with muriatic acid' directly into his notebook:

Mix common muriatic acid with levigated manganese in any quantity in a glass retort [ill] which put into warm sand & apply a glass receiver capable of containing 12oz of water. Into the receiver put about 2 drachms Water, the joints are to be luted only with a piece of blotting paper tied round them. In a quarter of an hour a quantity of elastick [sic] acid going over into the receiver gives the air contained in it a yellow colour, & then it is to be separated from the retort. At this time if the paper has been closely applied a portion of the aerial fluid will rush out with some force & you therefore must have a cork ready to close it immediately.⁴⁰⁸

This entry shows that Marshall knew the method by which dephlogisticated muriatic acid the chemical necessary for bleaching was produced. Now at the end of eighteenth century, Marshall had to find out if he could use dephlogisticated muriatic acid to bleach flax, as the manufacturers in Lancashire did for cotton.⁴⁰⁹ To do so, he needed to obtain the raw materials by which he could create dephlogisticated muriatic acid so that he could use it in the bleaching process at his firm. And, he needed to know if any advances had been made to chemical bleaching since he had attended Booth's lectures and transcribed parts of Scheele's *Chemical Essays*.

John Marshall went about acquiring these skills, knowledge and materials by engaging in a dialogue with bleachers, manufacturers and experts in the field of chemistry, and by reading the latest scientific literature as it appeared in print. He found out that he could purchase manganese, the key ingredient for creating the bleaching

⁴⁰⁷ *The Chemical Essays of Charles-William Scheele. Translated from the Transactions of the Academy of Sciences at Stockholm.* (Edinburgh: C. Eliot, 1786).

⁴⁰⁸ Parentheses mine. This passage is transcribed directly from *The Chemical Essays of Charles-William Scheele*, p. 92. MS 200/42, Lectures, 18v.

⁴⁰⁹ Musson and Robinson, *Science and Technology*, pp. 315-316

agent manganese, from William Talbot in Liverpool for £8.5s per ton. In December 1797 he spoke to bleachers at Wigan in Barnsley to see what method of bleaching they used (ashes as at Leeds), and the quantity of materials they employed in the process.⁴¹⁰ On finding that they used the same method he already employed at Leeds, he turned his attention to discovering if any advances had been made to chemical bleaching since he transcribed Scheele's *Essays*. To do this, he took the approach described by James Boswell at the beginning of this thesis:

Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information upon it. When we enquire into any subject, the first thing we have to do is to know what books have treated of it. This leads us to look at catalogues, and at the backs of books in libraries. (James Boswell, *Life of Samuel Johnson*)⁴¹¹

Marshall knew how to 'find information' upon the subject of chemical bleaching. Just as Johnson recommended, he found 'what books have treated of it', he looked 'at catalogues, and at the backs of books in libraries', and this led him to the work and publications of French chemist Claude Louis Berthollet (1748-1822).

Claude Berthollet was responsible for discovering the full potential of the bleaching properties of dephlogisticated muriatic acid. Berthollet invented sodium hypochlorite, a bleaching agent which he created by passing dephlogisticated muriatic acid through a solution of sodium carbonate. He reported this finding to the Académie Royale des Sciences in 1785, and in 1789 a practical article on the properties of bleaching using the 'Javelle method' (intended for the use of manufacturers) was published in the second volume of *Annales de Chimie*.⁴¹² The following year this article was translated into English by Robert Kerr an Edinburgh surgeon as an *Essay on the New Method of Bleaching* (the same year Berthollet was elected a fellow of the Royal Society of London) and a translation also appeared in the first volume of *The Repertory of Arts*

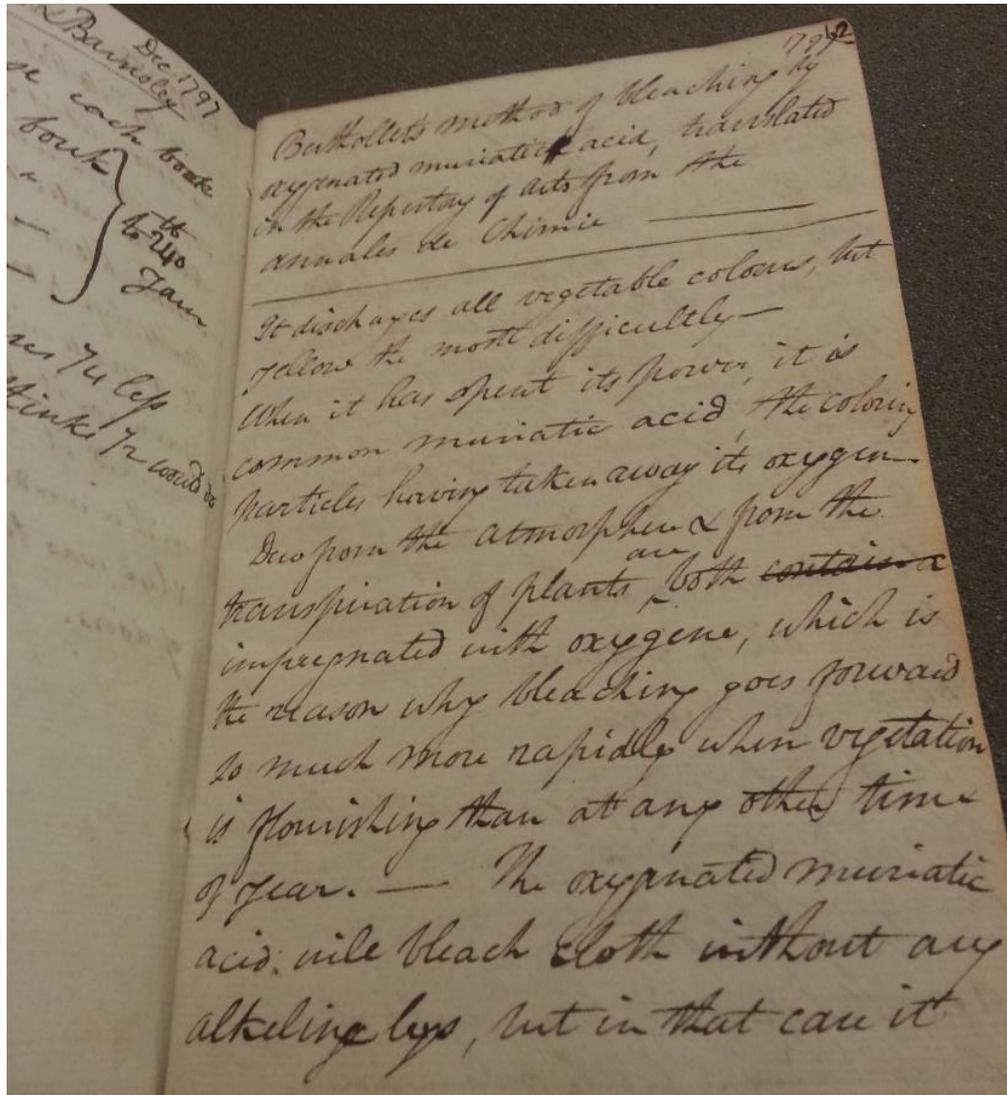
⁴¹⁰ Marshall recorded that at Wigan to achieve a uniform whiteness on 240 pounds of yarn they used 40 pounds of ashes on the first bout of bleaching, 20 pounds of ashes on the second, 10 pounds on the third, and 5 pounds on the fourth round. MS 200/55 Bleaching, p. 1.

⁴¹¹ James Boswell, *Samuel Johnson*, p. 317.

⁴¹² After Javelle in France where Berthollet made the discovery. *Annales de Chimie*, 2 (1789), 151-90.

and Manufactures (1794).⁴¹³ It was by reading the latter of these two translations of Berthollet's work that Marshall learnt about the latest advances in bleaching.

Figure 6.3: John Marshall's transcription of Charles Berthollet's 'Account of the Method of bleaching Cloths' in his Notebook of Experiments on Bleaching



Source: MS 200/55 Notebook of experiments on bleaching, 1797 to 1802. Reproduced with the permission of Special Collections, Leeds University Library.

⁴¹³ C. Berthollet, *Essay on the New Method of Bleaching*, transl. R. Kerr, (Edinburgh, 1790); C. Berthollet, 'Account of the Method of bleaching Cloths, and Thread, by the oxygenated muriatic Acid; and of some other Properties of this Liquor, relative to the Arts [...] from the Annales de Chimie' in *The Repertory of Arts and Manufactures* (London, 1794), pp. 53-69.

Berthollet's article gave a detailed account of the process by which a manufacturer could produce sodium hypochlorite. It listed the equipment and quantities of materials needed to produce the bleaching agent, and the strength of the liquor that would be produced. It also described how the agent had been applied to the process of bleaching cotton in England – Berthollet was a close acquaintance of James Watt Jun. who in collaboration with Lancashire manufacturers had applied the liquor to the process of cotton bleaching. John Marshall's notes on the article in his experiment book reflect this detail, and show the significance he attached to Berthollet's method: Marshall recognised that it might be the potential solution he needed to bleach the linen he produced at his factory. Marshall dedicated ten pages of his experiment book to transcribing the relevant parts of Berthollet's research.⁴¹⁴ He recorded the chemical composition of the bleaching agent, muriatic acid, and the effect it would produce on the cloth:

It discharges all vegetable colours, but yellow the most difficulty - When it has spent its power, it is common muriatic acid, the colouring particles having taken away its oxygen. [...] The oxygenated muriatic acid will bleach cloth without any alkaline loss, but in that case it must be used very strong, and the cloth will not keep its colour, but grow yellow when used.⁴¹⁵

He also recorded the process by which the bleaching agent was made, the quantities of materials and apparatus used in the process, and how to test the strength of the bleaching liquor this process produced:

The gas will bleach quicker than impregnated water, but a greater waite [sic] of it takes place, the cloth is much more liable to inquiry & it is more difficult to obtain an even colour.' To try the strength of the liquor. Take one part of Indigo finely powdered & 18 of oil of vitriol, put it into a [ill] and keep it for some hours in a water bath, when the solution is finished dilute it with a thousand parts of water. Put this solution into a graduated glass tube, & add some of the liquor gradually to it, till the colour of the indigo is destroyed. Determine first how many measures of liquor of a proper strength will destroy the colour, & the comparative strength of any liquor is immediately known.⁴¹⁶

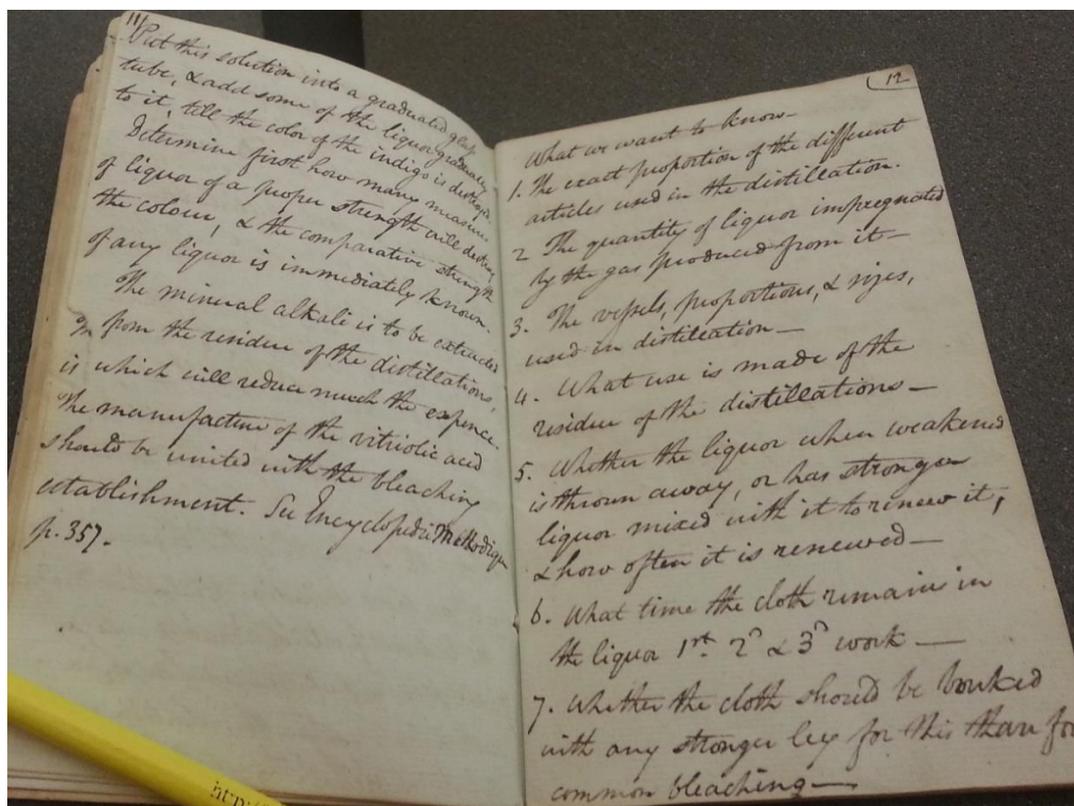
⁴¹⁴ MS 200/55 Bleaching, pp. 2-11.

⁴¹⁵ Ibid., pp. 2-3.

⁴¹⁶ Ibid., pp. 10-11.

Marshall expanded upon the information he gathered from Berthollet by reading other printed material. He gained practical advice about some of the materials used in the process, such as oil of vitriol by reading the *Encyclopédie Méthodique* which informed him that 'the manufacturer of the vitriolic acid should be united with the bleaching establishment', and recorded this immediately under his entry on how to test the strength of the liquor.⁴¹⁷ Still he did not begin experimentation.

Figure 6.4: John Marshall's Notebook of experiments on bleaching, 1797 to 1802. Containing a transcription from *L'Encyclopédie Méthodique* and questions on the use of a bleaching liquor



Source: MS 200/55 Notebook of experiments on bleaching, 1797 to 1802. Reproduced with the permission of Special Collections, Leeds University Library.

Instead, on the basis of the material he had read Marshall devised a series of practical concerns and questions about the bleaching of cotton that he wanted answers to before

⁴¹⁷ Ibid., p. 11.

he would begin to use a bleaching liquor to dye linen in Leeds (see figure 6.4). The eleven questions and concerns covered a manner of topics from the exact proportion of the materials used in the distillation, to how long cloth should remain in the liquor; whether the bleaching liquor had to be thrown away once used, or if it could be renewed with stronger liquor, and questions about the apparatus used in the distillation and dyeing process: ‘whether in the distillation they use any method of stirring about the water in the tub to make it absorb the gas’ and ‘whether they use any intermediate vessel between the matrass and the tub, or any safety pipe?’.⁴¹⁸

John Marshall sent William Wood, a silk dyer operating on Hunslet Lane into Lancashire to obtain these answers for him.⁴¹⁹ In January 1798 Wood spoke to bleachers at Bolton in Lancashire and reported the information to Marshall.⁴²⁰ At Bolton, Wood discovered that the proportion of materials in the distillation process was ‘equal quantities for distillation of manganese – salt – oil of vitriol – water’, and that the bleachers re-used the same liquor for about a fortnight ‘till it becomes foul with dirt and is thrown out’ by adding a stronger solution to it – ‘they put 18 parts of water to 1 of the impregnated liquor as a proper strength for cottons’. Wood also learned that the equipment they used at Bolton meant it was not necessary to stir the water during the distillation to help it absorb the gas:

The tube conveys the gas into the water in the tub about 4 inches below the surface, & the tub has a lid close fitted to it which prevents the gas that bubbles up through the water from escaping & it is afterwards absorbed by the water. No stirring is necessary.⁴²¹

and in addition, he found out how to prevent Marshall’s linen from being damaged during the bleaching process:

⁴¹⁸ Ibid., pp. 12-13.

⁴¹⁹ The 1797 Leeds directory lists a William Wood of Hunslet Lane, Silk-dyer. John Ryley, *A directory for the town and borough of Leeds* (1797).

⁴²⁰ Wood probably spoke to J.H Ainsworth a bleacher at Halliwell near Bolton, from whom Marshall went on to purchase a bleaching liquor.

⁴²¹ MS 200/55 Bleaching, p. 16.

They dissolve 6oz of ashes in 8 Galls of water before they impregnate it with gas. This custom is general at Bolton, but not universal. They have never had a piece of cloth damaged these seven years – at Nottingham where they bleach their stockings chiefly in the gas they have frequently very heavy losses by damages. At Bolton they use this mode of bleaching all the year round & say it is the cheapest. They say there must always be a light work with ashes after the cloth has been in the liquor, otherwise the liquor would tender [possible illegible] as no washing will completely take it out. After bouking & washing the cloth should be wrung, but it is not necessary for it to be dry before it is put into the liquor.⁴²²

This feedback raised further questions. Marshall wanted to know why the Bolton bleachers used a closed-tub in the distillation process, and sought an explanation for precisely how the use of ashes prevented their cloth from being damaged. He sought to clarify Wood's remarks on these matters and turned to printed matter for this purpose. In the *Encyclopédie Méthodique* he found a scientific explanation for the actions at Bolton:

The gas unites with difficulty with water when passing through it; or even when the water is agitated, but **when in contact with water in a close vessel it will be absorbed in 12 hours** & only that part of it left which is common air. At the beginning of the distillation it will be 9/10 of it common air, & towards the conclusion scarcely /2. **A little of the earth of manganese is sometimes carried over in the distillation which is precipitated by the addition of an alkali. This sums the reason for dissolving a small quantity of ashes in the water before it is impregnated.**⁴²³

At this stage Marshall contacted the Bolton bleachers directly. He purchased a bleaching liquor from Ainsworth and Vallet at Halliwell near Bolton, and on the basis of their instructions for using the liquor on cotton, set about seeing if it was possible to dye linen using a bleaching agent.⁴²⁴ Finally two years after he had purchased the bleaching works, Marshall set about experimenting on the bleaching of linen.

⁴²² Ibid., pp. 14- 17.

⁴²³ Emphasis mine. 'From *Encyclopédie Méthodique* pg. 134', MS 200/55 Bleaching, p. 19.

⁴²⁴ J.H. Ainsworth owned the bleaching works at Halliwell near Bolton where Wood had obtained his information. Ainsworth, a practical man, employed Matthew Vallet a French chemist to supply chemical expertise; it was Vallet who discovered the benefits of the gas absorption in an alkaline solution and applied this to cotton bleaching. For Vallet's role in disseminating knowledge of the 'Javelle' method of chlorine bleaching to manufacturers in Lancashire, see Musson and Robinson, *Science and Technology*, pp. 274-277.

Marshall began his experiments on 1 March 1798. He began by establishing how much liquor was needed to bleach linen, testing different solutions of the liquor diluted in water on worked and raw linen. Then he set about estimating the cost of bleaching linen with the Ainsworth liquor which cost 3d per pint (including bottles and carriage). He found that linen bleached best when the bleaching liquor was diluted with no more than 4 parts of water (cotton could be dyed with a solution of 1 part liquor to 14 parts water) and was thus more costly than the method of natural bleaching he already employed. At this stage Marshall realised that if he could produce the liquor at a cheaper rate it would be possible to bleach linen at the same price as he already spent on bleaching outlays, but without having to wait months for the natural process to take its course:

It seems that Linen yarn will bear a very strong liquor without injury. The same liquor undiluted acts upon our yarn without injury, which Ainsworth & co for their cottons dilute with 14 parts water. On the other hand it has very little effect on our yarn when diluted with more than 4 parts water. If this be really the case, the disadvantage of its requiring such powerful liquor may possibly be more than counterbalanced by its being able to bear it so strong as to produce a colour at 1 or 2 operations & thusly produce a greater saving in labour than the extra expence of the chymical liquor. If yarn could be made white with one regular work, then bouking & steeping in the liquor once, & if a pint of liquor would so for a score & it could be made for 1d p pint, it would be nearly if not quite as cheap, as the common mode of bleaching.⁴²⁵

Before entering into a series of experiments to produce a bleaching liquor Marshall engaged in a pattern of research whereby he conversed with manufacturers and bleachers, and read printed material on bleaching and chemistry. He needed to know what ingredients he would need to produce the liquor and the quantities and equipment involved in the process. He went to Bolton and spoke to Ainsworth and Vallet; he contacted bleachers at Knaresborough, he read and made notes from various printed matter including Antoine Lavoisier's *Elements of Chemistry* (translated by Robert Kerr, 1790), John Curry's *Elements of Bleaching* (1779) and Pajot des Charmes' *Art of*

⁴²⁵ MS 200/55 Bleaching, p. 28.

Bleaching (translated by Nicholson, 1790).⁴²⁶ Only in July 1798 did he begin to experiment on producing a bleaching liquor using salt, vitriol and manganese. In spite of various attempts to produce a satisfactory liquor (including a visit in August 1799 from Matthew Vallet who helped Marshall prepare the bleaching liquor) Marshall struggled to produce a liquor that first matched the strength of Ainsworth and Vallet's liquor and secondly successfully bleached the linen, but at a cheaper price than the traditional method.⁴²⁷ In spite of then trying other methods of bleaching, including Tennant and Knox's bleaching powder, and Chaptal's new invention 'vapour bleaching' which he read about in *The Repertory of Arts and Manufactures* (linen was boiled in an alkali before being hung in steam), Marshall never found a cheaper alternative to the traditional method of exposure to the sun.⁴²⁸ In 1803 he therefore ended his series of experiments on bleaching, and used a combination of methods to bleach the linen spun at the factory at Water Lane).⁴²⁹

This brief analysis of the entries in Marshall's notebook on bleaching shows he had learnt from his previous forays into experimentation. Rather than delve into experimentation on bleaching with no prior knowledge of the subject (as he had done in his early experiments on the Darlington machinery), his eighty-page notebook of experiments on bleaching between 1797 and 1802 reveals a more considered approach to chemical bleaching. It shows that he was reliant on specialist (and non-specialist) information on the process of bleaching and that he enhanced his knowledge of bleaching by a combination of reading, experimentation and communication between local manufacturers and bleachers in Yorkshire and Lancashire.

⁴²⁶ *Ibid.*, pp. 32; 35; 40.

⁴²⁷ Marshall recorded that 'whilst Mr. Valet was here we made the bleaching liquor with 60lb each of the materials', *Ibid.*, pp. 44-46.

⁴²⁸ For Marshall's account of Chaptal's 'new method of bleaching cotton', see MS 200/55 p. 51; Tennant, Knox & Co were chemical manufacturers in Glasgow, Scotland. Marshall recorded his experiments on their bleaching powder in his notebook MS 200/55 p. 57; on Marshall's experiments on vapour bleaching which he eventually concluded that 'It seems that no great progress can be made in bleaching by the application of alkalis alone. Too intense an action of them, without the alternate action of acids reduces and injures the yarn'. MS 200/55, pp. 61-70.

⁴²⁹ Rimmer, *Marshalls*, p. 53.

6.3 John Marshall: The Role of Reading in Experimentation

The publications John Marshall was reading for his experiments on bleaching contained some of the greatest scientific advancements of the age. This section explores these publications in more detail and argues that Marshall accessed printed matter in the subscription libraries of eighteenth-century Leeds.

New discoveries in continental chemistry were communicated to Britain by print. The discoveries were first communicated in person (or by letter) to the learned societies of continental Europe, before appearing on the continent in printed format, often in the form of a learned journal attached to the society in question. Finally these discoveries were translated into English; printed in one of the new scientific periodicals that emerged in the late eighteenth century.⁴³⁰ In Britain, a number of journals sprang up to meet the demand for new scientific information that correlated with these discoveries. Among some of the earliest commercial scientific journals in the country, were William Nicholson's *Journal of Natural Philosophy, Chemistry and the Arts* (f.1797) and Alexander Tilloch's *Philosophical Magazine* (f.1798), journals whose key purpose was to provide the public with access to scientific discourse from around the known globe.⁴³¹

As we have seen, it was by reading the latest discoveries from the continent as they became available in print (combined with discussion with other manufacturers) that Marshall became aware of the latest developments in chemical bleaching. To give but a few examples, he was knowledgeable about Scheele's discovery of dephlogisticated muriatic acid and Berthollet's experiments on sodium hypochlorite and Chaptal's 'vapour bleaching'. Much of the work Marshall read was continental, yet during the years he experimented on bleaching Britain was at war with France, and

⁴³⁰ This pattern of dissemination was much like the earlier instances among the medical community.

⁴³¹ Topham, 'Science, Print and Crossing Borders', p. 320.

fewer books from France were being imported in to Britain than usual.⁴³² So where was Marshall accessing this material?

Continental chemistry and works of philosophy may have featured in John Marshall's private collection of books. Marshall's private collection of printed literature contained printed material on the arts, commerce and manufacturing, and works of a religious and political nature.⁴³³ In the late eighteenth century Marshall was purchasing material linked to his manufacturing interests. In 1795 he subscribed (along with a number of other individuals from Leeds) to John Banks's *A Treatise on Mills*; a lecturer in natural philosophy, Banks sought to show manufacturers, mechanics, artisans and engineers how they could expand their theoretical knowledge and avoid 'attempting what men of science know to be impossible'.⁴³⁴ Yet as far as we know this is the only work that Marshall subscribed to at this date related to his practical interests. The other work in his private collection dating from the late eighteenth century was Joseph Towers collated publication *Tracts on political and other subjects* (1796), which Marshall subscribed to along with fellow Leeds Unitarians William Walker (merchant) and William Wood (Minister at Mill Hill Chapel).⁴³⁵ In his later life Marshall could be found subscribing to works of topography including Joseph Hunter's *The History and Topography of the Parish of Sheffield* (1819); Samuel Lewis's *A Topographical Dictionary of Ireland*, (1837); as well as Thomas Eastoe Abbot's *The soldier's friend* (1828).⁴³⁶

⁴³² Ibid., p. 314.

⁴³³ The examples in this paragraph are based on an analysis of book subscription lists. Later members of his family were well known collectors of books, including his grandson Julian Marshall.

⁴³⁴ John Marshall was listed as a subscriber along with William Bywater, Leeds; Edward Greenwood, bookseller, Leeds, (who purchased four copies); J. Richardson, Leeds; Mr. Riley, Leeds; J. Tetley, Leeds; William Walker, Leeds and Thomas Wilkinson, Leeds. John Banks *A treatise on mills, in four parts. Part First, on Circular Motion. Part Second, on the Maximum of Moving Bodies, Machines, Engines, &c.* (London, 1795).

⁴³⁵ Thomas Johnson of Holbeck, near Leeds also subscribed to this publication. *Tracts on political and other subjects, published at various times by Joseph Towers, L. L. D. and Now First Collected Together, in three Volumes* (London, 1796).

⁴³⁶ Joseph Hunter, *Hallamshire: The History and Topography of the Parish of Sheffield in the County of York...* (London: Lackington, 1819); Samuel Lewis, *A Topographical Dictionary of*

Furthermore a private collection of books, particularly those on the sciences and comprised of foreign literature would have been costly. A new octavo edition cost approximately ten shillings in 1800, before taking into account the cost of transportation and shipment.⁴³⁷ Although Marshall was a wealthy man, with a net personal estate of £33,211 in 1803 and could have afforded to make numerous book purchases, it is highly plausible that he accessed works of natural philosophy, chemistry and continental science in the Leeds Libraries.

John Marshall subscribed to all four of the town's subscription libraries. He was a member of the Medical Library, the Leeds Library, from 1793 he joined the newly formed New Subscription Library and of course he was a subscriber at the Foreign Library. In chapter four we saw that the library collections were geared towards those with an interest in manufacturing and the sciences. Many of the publications Marshall was reading during his experiments on chemical bleaching featured in the scientific collections of the Leeds Libraries.

The Leeds Library and the New Subscription Library held copies of *The Repertory of Arts and Manufactures* (1794) which of course featured Berthollet's 'Account of bleaching'.⁴³⁸ Their collections also contained Tilloch's *Philosophical Magazine* (where Marshall had most likely read the account of Chaptal's 'new method of bleaching'). The Leeds Library, which had a section dedicated to 'Mathematics, Natural Philosophy and the Mechanic Arts' in its 1802 catalogue, held an octavo edition of Scheele's *Chemical Essays* (item 987) and a translation of Lavoisier's *Elements of Chemistry* (1790) which Marshall had transcribed excerpts from in 1798.⁴³⁹ And it is

Ireland, Comprising the Several Counties (1837); as well as Thomas Eastoe Abbot's *The soldier's friend; or, Memorials of Brunswick, a poem* (Hull, 1828).

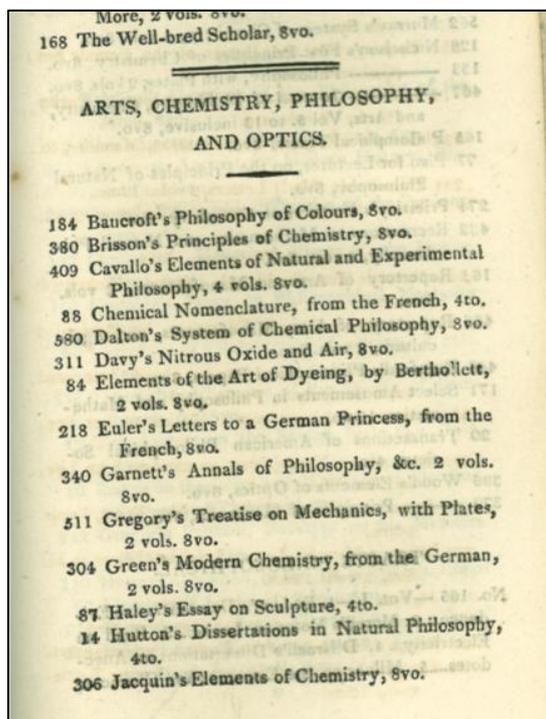
⁴³⁷ Sullivan, *British Literary Magazines*, p. xvi.

⁴³⁸ *The Repertory of Arts and Manufactures* (1794) featured in the *Compleat Catalogue of the Leeds Library* (1802) and by 1805 the New Subscription Library held sixteen volumes of the *Repertory of Arts and Manufactures; A Catalogue of Books in the New Subscription Library* (1805).

⁴³⁹ The section in the 1802 catalogue dedicated to 'Mathematics, Natural Philosophy, and the Mechanic Arts' consists of seven pages of entries. *Compleat Catalogue* (1802), pp. 113-120.

highly likely that Marshall read and made comments on a copy of the *Encyclopédie Méthodique* that he borrowed from the Foreign Library, which contained fifty-four volumes of the *Encyclopédie Méthodique* by the year 1811.⁴⁴⁰ Given the nature of the costs associated with importation at this time, and particularly the complex and lengthy supply network involved in the process of importing foreign material into Britain it is likely that Marshall accessed many of these books in the Leeds Libraries.⁴⁴¹ The original French version of Lavoisier's *Elements of Chemistry* for instance cost 9 shillings, while the translation by Donald Kerr cost 7s.6d.⁴⁴²

Figure 6.5: 'Arts, Chemistry, Philosophy and Optics' in *A Catalogue of Books in the New Subscription Library* (1811)



Source: *A Catalogue of Books in the New Subscription Library in Albion Street, Leeds* (Leeds: Printed by Edward Baines, 1811).

⁴⁴⁰ *A Compleat Catalogue* (1811). In 1981 P. S. Morrish recorded that the *L'Encyclopédie Méthodique* had migrated from the Leeds Library to the Brotherton Library, University of Leeds. P. S. Morrish, 'Foreign-language books in some Yorkshire Subscription Libraries, 1785-1805', *Yorkshire Archaeological Journal*, 53 (Leeds: A. Wigley, 1981) 81.

⁴⁴¹ Topham, 'Science, Print and Crossing Borders', pp. 316-321.

⁴⁴² For more information about Lavoisier's *Elements of Chemistry*, see Topham, 'Science, Print and Crossing Borders' pp. 322-324.

Still the Leeds Libraries did not contain all the books Marshall needed for his research. Their collections did not contain Francis Home's *Art of Bleaching* (1756),⁴⁴³ John Curry's *Elements of Bleaching* (1774),⁴⁴⁴ or Pajot de Charmes's *The Art of Bleaching* which he read in 1799.⁴⁴⁵ These Marshall may have borrowed from a friend, or purchased for his private collection from a bookseller. In spite of these examples, the evidence overwhelmingly suggests that Marshall's membership of the Leeds libraries allowed him to access a variety of books on the arts, commerce, science and manufacturing; works he needed for practical purposes as a manufacturer. These books, alongside his discussion with manufacturers and bleachers, meant he became technically knowledgeable in the arts, sciences and manufacturing in Leeds in the eighteenth century.⁴⁴⁶

6.4 Merchant-Manufacturers in the Leeds Libraries

As the example of John Marshall illustrates, Leeds was undergoing rapid industrial change in the late eighteenth century. Marshall was just one of a growing number of merchant-manufacturers in Leeds who invested in mechanisation and who

⁴⁴³ Francis Home (1719-1813) of Edinburgh, 'wrote the first scientific study of bleaching, *The Art of Bleaching* (1756). Home recommended sulphuric acid over sour milk as a bleaching agent', William E. Burns *Science in the Enlightenment: An Encyclopedia* (Santa Barbara, Calif: ABC-CLIO, c2003); MS 200/55 Bleaching, p. 35.

⁴⁴⁴ John Curry *Elements of Bleaching* (Dublin, 1774). James Kelly, 'Curry, John (1702/3–1780)', *ODNB*, [<http://0-www.oxforddnb.com.wam.leeds.ac.uk/view/article/6955>, accessed 2 Oct 2013].

⁴⁴⁵ Marshall transcribed parts of Pajot des Charmes' *Art of Bleaching* in his experiment book. The entry dated August 1799 included the following information 'The salt must be made perfectly dry & pounded very fine & sifted through a sieve, then mixed with very well with the manganese. The sulphuric acid must be poured into the water it is to be mixed with gently which causes less effervescence than if the water was poured into it.' MS 200/55 Bleaching, p. 40.

⁴⁴⁶ Berthollet, 'Account of the Method of bleaching Cloths', pp. 53-69; Charles Scheele, *The chemical essays of Charles William Scheele*. Transl. by Thomas Beddoes (London, 1786); Pajot des Charmes, *The art of bleaching piece-goods, cottons, and threads, by Means of the Oxygenated Muriatic Acid* (London: G. G. and J. Robinson, Pater-Noster-Row, 1799.); Jean Antoine Chaptal, 'Account of a new method of bleaching cotton [...] by J.C. Delametherie' in William Nicholson *A Journal of Natural Philosophy, Chemistry and the Arts, Volume 4* (London: G. G. and J. Robinson, Pater-Noster-Row, 1801); Antoine Lavoisier *Elements of Chemistry* (Edinburgh: William Creech, 1790).

attempted to assemble the various processes of manufacturing under one roof. In the eighteenth century, Leeds's merchants were far more than mere buyers and sellers of cloth.⁴⁴⁷ The clothiers at Leeds's cloth halls sold their material 'in the rough' (undyed and undressed) and the merchants who purchased this material had to put it through a finishing process. Some merchants had this done by separate firms of dyers or dressers such as Sir Henry Ibbotson, who in the mid-century employed four cloth dressers, but from 1760 most merchants operating in Leeds had their own finishing plants where this process was undertaken, and were investing in machinery to quicken the process.⁴⁴⁸ By the early 1790s the use of machinery among merchants was becoming commonplace. In 1791, in response to a number of petitions by woollen workers, sixty-one Leeds merchants, including the Bischoffs, Denisons, Oateses, Rhodeses, Sheepshankses, Horace Cattaneo, Edward Markland, and the firm of Wormald, Fountaine & co, put their names to a letter published in Leeds newspapers. In the letter, these merchants, citing the advances made in Lancashire in the cotton industry, defended their right to use machinery in manufacturing woollens:

The Cloth Merchants of Leeds, being informed that various kinds of machinery, for the better and more expeditious dressing of woollen-cloth, have been lately invented, that many such machines are already made and set to work in different parts of this county, and that great numbers more are contracted for, to be used in the dressing of cloth in other parts of Yorkshire, and in the Counties of Lancaster, Derby, Chester, Wilts and Gloucester, thought it necessary to meet together on the eighteenth of October, to take into their most serious consideration what steps were needful to be taken, to prevent the Merchants and Cloth-Dressers in other parts, from diminishing the staple trade of this town, by the enjoyment of superior elements in their business.

At the said meeting, attended by almost every Merchant in the town, the above facts did clearly appear, and after a discussion of the merits of various inventions, and the improvement in dressing likely to be derived from them, it appeared to all, absolutely necessary that this town should partake of the benefit of all sorts of improvements that are, or can be made in the dressing of their cloths. [...] In order that the matter should be undertaken on a plan to afford every possible information, a committee was then

⁴⁴⁷ Herbert Heaton, 'Benjamin Gott and the Industrial Revolution in Yorkshire', *Economic History Review*, 3:1 (1931), 45-66, (p. 47).

⁴⁴⁸ Ibbotson employed four cloth dressers between 1749 and 1760: William Lupton, John Wright, John Darnton and John Scurr. *Wilson Gentleman Merchants*, pp. 30-31.

appointed for the purpose of obtaining one of each of the different machines now in use, on the most approved construction, and a subscription was entered into for defraying the expence thereof, and to enable them to obtain an eligible situation for erecting and working them for the inspection of the trade, previous to their being brought into general use. [...] They wish to remind the Inhabitants of this Town, of the Advantages derived to every flourishing Manufacture from the Application of Machinery; they instance that of Cotton in particular, which in its internal and foreign Demand is nearly alike to our own, and has in a few Years by the Means of Machinery advanced to its present Importance, and is still increasing.⁴⁴⁹

Three things are apparent from this show of consolidation among Leeds merchants. Firstly, that the use of machinery among merchants, if not already in widespread use in Leeds by 1791, was increasing. Secondly, that Leeds merchants were actively seeking to use machinery to improve production, and formed a committee to encourage their general use. Thirdly, in relation to this, that in late Georgian Leeds, there existed a group of merchants who were versed in the machinery used in manufacturing.

That there was a group of like-minded merchant-manufacturers who were committed to the increased application of machinery to woollen-cloth manufacture, forms the basis for discussion throughout the remainder of this chapter. It raises the question of whether this committee of merchant-manufacturers in Leeds underwent a process of technical transformation similar to that undertaken by Marshall in the late 1780s? Did they, too, gain a practical knowledge of manufacturing through a combination of learning, experimentation, discussion amongst one another and reading on the subject as they sought to obtain ‘one of each of the different machines now in use [...] for erecting and working on them, for the inspection of the trade, previous to their being brought into general use.’?⁴⁵⁰ In this section I suggest that they did, and that they interested in using reading to achieve this ambition.

⁴⁴⁹ Letter from Leeds Cloth Merchants, Leeds, November 18th, 1791 [Broadsheet, Leeds Thoresby Society], quoted in W.B. Crump, *The Leeds Woollen Industry, 1780-1820*, (Leeds: The Thoresby Society, 1931), 317-319.

⁴⁵⁰ *Ibid.*, p. 318.

Sadly the names of those belonging to this committee are no longer known, but it is plausible that Benjamin Gott, junior partner, or the 'co' in 'Wormald, Fountaine & Co', was one of its members. It may be coincidence but one year after the committee was formed, Gott, then just two years out of his apprenticeship with the firm, led the initiative to build a new mill. In 1792 Gott, on behalf of the firm, purchased sixteen acres of land alongside the River Aire to the west of the city and set about constructing Bean Ing Mill (1792-1793). The mill brought the various elements of woollen manufacture including spinning and weaving in one place for the first time. In Gott, then, we see the same sort of initiative that was employed by John Marshall at Adel. As we now turn to examine his surviving business records it will become clear that Gott in the process of learning the trade of merchant-manufacturer, like Marshall, engaged in a process of self-education that combined experimentation, discussion with other merchants, and was at least partially dependent on information acquired from printed material.

Benjamin Gott (1762 – 1840)

Benjamin Gott is today remembered as a leading figure in Leeds civic society and a patron of the arts. The entries in his wife Elizabeth's (1768–1857) diaries (née Rhodes, whom he married in 1790) attest that the Gotts were active socialites who regularly held dinner parties and attended functions.⁴⁵¹ Gott is a prime example of a civically minded Anglican Tory in late eighteenth-century Leeds. He was nominated to the Corporation in 1791, became Captain Commander of the Leeds Armed Association in 1798, and elected Mayor of Leeds in 1799.⁴⁵² Gott was a subscriber of the Leeds Library,

⁴⁵¹ Veronica Lovell, *Benjamin Gott of Armley House, Leeds 1762 - 1840: Patron of the arts*, (Leeds: Thoresby Society, 1984); Leeds, Brotherton Library, MS194/3/8 Elizabeth Gott; Diary; Leeds, Brotherton Library, MS194/3/17 Notebook [of Elizabeth Gott and William Gott, her son] containing lists of dinner guests, etc, 1822-57; and Leeds, Brotherton Library, MS 194/3/22 Thomas Hardwick of Leeds, 'Invention and Valuation of sundry Household Effects and other personal property of Miss Abigail Rhodes of Armley House', 11 February 1845.

⁴⁵² Emily Hargrave, 'The Early Leeds Volunteers', *Thoresby Society XXVIII*, (Leeds, 1928) 255-313 (pp. 290-292).

a founder member of the New Subscription Library (1793), president of the Leeds Philosophical and Literary Society (established in 1819), and helped instigate the formation of the Leeds Mechanics' Institute (established 1824). He was also a major art collector and a leading figure in the Northern Society for the Encouragement of the Fine Arts.⁴⁵³ This coincided with his purchase of Armley House in 1803, where he established a fine library.⁴⁵⁴

Yet this picture of Gott as a Leeds civic entity somewhat obscures his earlier origins in business, as a merchant turned manufacturer. Historian of science Margaret Jacob, for instance, has highlighted Benjamin Gott's pioneering entrepreneurship in the early Leeds manufacturing scene. She argues Gott had scientific knowledge and was able to apply scientific acumen to wool dyeing.⁴⁵⁵ Furthermore Jacob likens Benjamin Gott to John Marshall, stating that both had a 'knowledge base that enabled them to invent or deploy mechanical contrivances that replaced human labor, to compete aggressively and to imagine themselves as superior to the idle and landed of the countryside who still possessed access to political power'.⁴⁵⁶ Jacob's article, which focuses primarily on Marshall, provides little information on the specifics of Gott's knowledge. Discussion in this section thus focuses on whether Gott had such scientific knowledge, how he acquired it, how he applied his knowledge in Leeds and whether books played any role in this. Though the sources for Benjamin Gott's early career are nowhere near as comprehensive as those for John Marshall, it is still possible to piece together something of his early career and activities first as a merchant, then as a merchant-manufacturer in Leeds.

⁴⁵³ Morris, 'Middle-Class Culture', pp. 208-211.

⁴⁵⁴ The house, including the library were remodelled in 1822 by Sir Robert Smirke, and in 1828 Eliza Allen wrote to Elizabeth Gott that 'Mr P[reston] was very much pleased with the library'. Leeds, Brotherton Library, MS 194/3/16, Letter Book 1827-1839: Eliza Allen to Elizabeth Gott, Armley House, 3 May 1828.

⁴⁵⁵ Jacob, 'Mechanical Science', p. 211.

⁴⁵⁶ *Ibid.*, p. 211.

Benjamin Gott was born in Leeds on 24 June 1762, the son of John Gott (1720 – 1793), a civil engineer who between 1760 and 1792 was resident engineer of the Aire and Calder Navigation, and his second wife Susanna Jackson (1723-1778).⁴⁵⁷ Benjamin Gott was educated at Bingley Grammar School, where he boarded from 1770 until the age of seventeen; there he gained a solid learning in the classical languages of Latin and Greek, although he later came to learn French.⁴⁵⁸ On New Year's Day 1780 he was apprenticed to prominent cloth merchants John Wormald and Joseph Fountaine for four years for the sum of £400.⁴⁵⁹ Wormald and Fountaine were among the five largest firms engaged in the cloth trade in Leeds in the late eighteenth century. In 1782 their home trade was estimated at £30,000 and their away trade at £10,000. During his apprenticeship, Gott learnt the aspects of the cloth trade necessary to become a successful merchant; he studied the firm's account books, was present at all the transactions they made, visited cloth halls in Leeds and Huddersfield, and in the final year of his indenture accompanied Wormald and Fountaine on their annual visits north and south.⁴⁶⁰ On completion of this apprenticeship, aged twenty-two, on New Year's Day 1785 Gott entered into the firm of Wormald and Fountaine as a junior partner. Gott had a one-eleventh share in the firm at a cost of £3,660 which his father John Gott

⁴⁵⁷ John Gott was elected a member of the Society of Civil Engineers in London in 1773. *Biographical Dictionary of Civil Engineers: volume 1, 1500 – 1830*, ed. by Alec Skempton (London: Thomas Telford Publishing, 2002), pp. 262-264. Biographical information on Benjamin Gott sourced from: W. B. Crump, *The Leeds Woollen Industry, 1780-1820* (Leeds: Thoresby Society, 1931), pp. 167-253; R. G. Wilson, 'Gott, Benjamin (1762–1840)', ODNB, [<http://www.oxforddnb.com/wam.leeds.ac.uk/view/article/49967>], accessed 16 May 2015]; Wilson, *Gentleman Merchants*, pp. 243-244.

⁴⁵⁸ Edward Ernest Dodd, *A History of the Bingley Grammar School 1529 – 1929* (Bradford, 1930), p. 59; 61; 146; Leeds, Brotherton Library, MS193/90. Letters of John Hopps, book-keeper, Leeds, to Benjamin Gott, 1796 – 1812, 'A letter to Gott from John Hopps, chief clerk in his counting house, is partially written in French, To Benjamin Gott at Glasgow, 22-25 August 1798'.

⁴⁵⁹ Leeds, Brotherton Library, MS 193/6: Indenture of apprenticeship of Benjamin Gott to Messrs & Fountaine, 1st January 1780.

⁴⁶⁰ These journeys came at an additional price. The indenture required John Gott to defray 'the Expence of horse hire' and any additional 'expences' when Benjamin Gott was required to travel 'for his improvement'. MS 193/6: Indenture of apprenticeship.

raised for him, while the other two partners each contributed £18,300.⁴⁶¹ These two partners died within a few years of Benjamin Gott joining the firm as a junior partner: John Wormald died in 1786; his shares passed onto his sons Harry (partner January 1790), Thomas (partner 1793) and Richard (partner 1795), while Joseph Fountaine died on January 24 1791.⁴⁶² Thus by the occasion of the Leeds Cloth Merchants' meeting on November 18 1791, Benjamin Gott, at the age of twenty-nine was a senior partner in the firm. Within a few months of this meeting Gott began engineering a design to build a woollen factory in Leeds. A few months after this meeting, on 20 March 1792, Gott, accompanied by Harry Wormald, purchased the site at Bean Ing for what became known as Park Mill. It is in the process by which Gott developed Park Mill that we can explore the claims made by Jacob about his knowledge and technical skill set.

A number of years after he entered into the manufacturing of wool, Gott claimed to have little understanding of the processes of manufacturing. In 1828 in response to questioning in the House of Lords on the state of British wool, Gott answered:

You have been a manufacturer in the foreign trade for many years?—Yes.
 Have you been practically in the trade?—Practically in every process of it.
 You are acquainted with all the details?—Except the manufacturing details.
 I was brought up as a merchant, and became a manufacturer rather from possessing capital than from understanding the manufacture. I paid for the talents of others in the different branches of manufacture.⁴⁶³

Bearing this last statement in mind, Gott appears not to have had a detailed technical knowledge of manufacturing; prior to 1792, Gott was predominantly a buyer of cloth. Nor was he directly involved in the construction of Park Mill, instead employing architect and engineer John Sutcliffe to design and build the mill. Park Mill was predominantly a scribbling and fulling mill, accompanied by an engine house and dye house, but, when it

⁴⁶¹ Leeds, Brotherton Library, MS 193/8 Rough draft of articles of agreement for co-partnership between John Wormald, Joseph Fountaine & Benjamin Gott, [1st January 1785].

⁴⁶² After the death of Joseph Fountaine, the Fountaines maintained a financial but not an active interest in the firm.

⁴⁶³ [*Italics mine*]. Select Committee of House of Lords on State of British Wool Trade: Report, Minutes of Evidence, Appendix, Index, p. 289; 1828 (515) VIII.445.

came to decision about the contents inside the mill, which was intended to reduce Gott's economies on labour and the cost of production, Gott was very much hands on.⁴⁶⁴ Machinery and equipment arrived at the mill from across the country, including a forty-spindle jenny, two " machines or things called 'willies' at a cost of 3l each, scribbling and carding engines, a stubbing billy with thirty spindles cost ten guineas; and a loom-maker. Gott himself, had 'an interest in mechanical problems', and set about sourcing a steam engine to power these operations.⁴⁶⁵ The steam engine, a 40h.p. engine was ordered from Boulton and Watt in Birmingham in August 1792 and although it was anticipated that the engine would be set to work in June, it was December 1793 before the engine began powering the mill.⁴⁶⁶ While the correspondence between Gott on the one hand and the representatives for Boulton and Watt on the other in this period attests to at least a basic knowledge of the machinery being installed in the mill, Benjamin Gott's practical knowledge of manufacturing is more explicit in the records relating to the dyeing of wool on the premises.

From the outset of the establishment of Park Mill, Benjamin Gott sought to carry on all the processes associated with manufacturing wool on the premises, including dyeing. By October 1792 Gott had built a dye-house on the site, and was purchasing the necessary materials to begin the dyeing of wool such as lime and potash.⁴⁶⁷ On 27 December 1792 Gott received a quote for, and ordered dyewoods such as Fustick and Peachwood, amounting to £9.15s.⁴⁶⁸ In January 1793 Gott received a

⁴⁶⁴ Select Committee of House of Lords on State of British Wool Trade: Report, Minutes of Evidence, Appendix, Index, p. 280; 1828 (515) VIII.445.

⁴⁶⁵ Herbert Heaton, 'Benjamin Gott and the Industrial Revolution in Yorkshire', *Economic History Review*, 3:1, (January 1931), 45–66, p. 48.

⁴⁶⁶ John Southern for Boulton and Watt, to W.D.&G. Soho, Birmingham, 27 August, 1793, cited in W. B. Crump, *The Leeds Woollen Industry*, p. 209.

⁴⁶⁷ Gott paid £7.6.0 for 31 dozens of lime, on 25 October 1792. Leeds, Brotherton Library, MS 193/23: Memoranda of deliveries of lime, April 12th - November 20th 1792. In November 1793 Jonah Brown wrote to Gott attempting to sell him Russian Pot Ashes 'being informed you make use of this article in your manufactory'. Leeds, Brotherton Library, MS 193/63 Jonas Brown, Hull, to Gott & Co. 18 November 1793.

⁴⁶⁸ Crump, *Woollen Industry*, p. 201.

number of samples of dye including Madder and Cochineal that he had requested from William Preston in London, and his list of payments up to February 1793 shows he went on to order cochineal, chest indigo and cask madder from Preston, alongside white and red argol from Leitch and Smith in Glasgow.⁴⁶⁹ Gott's purpose in buying these materials was to experiment with different techniques in the process of dyeing wool. Evidence given to the Parliamentary Committee of 1806 by James Graham attests to Gott's experimentation in this field:

Mr Gott has introduced into Yorkshire a most advantageous scheme of dyeing by steam instead of water, which has cost him many thousands pounds in the experiments he has made; great improvements have been made likewise in dyeing blues, scarlets and blacks; for some time Mr Gott expended very large sums of money in his experiments, which no man but a great capitalist could have done.⁴⁷⁰

Whether Gott undertook such experimentation himself (as Marshall had done), is debatable. He certainly provided the capital and by the early nineteenth century had in his employ a number of engineers/ manufacturers who undertook much of the work for him, allowing him to spend the majority of his time in the counting house.⁴⁷¹ Among these was Joshua Dixon, Gott's nephew. In 1800 Dixon, in collaboration with William Pritchard conducted and recorded in a notebook a number of experiments on dyeing with steam in the dyehouse at Park Mill:

At 7 O'clock the steam gauge standing at 4 inches, I opened the cocks of the several dying vessels [...] the steam cocks were opened one after another, so that as soon as the vessel arrived at the temperature 180 or thereabout the cock was partly shut and another opened. [...] By this means the whole number of vessels were nearly boiling

⁴⁶⁹ Leeds, Brotherton Library, MS 193/30 Miscellaneous accounts etc, 1792 – 1794. In September 1793 one bill for dyestuffs alone amounted to £750. H. Heaton, *EHR*, p. 54.

⁴⁷⁰ Minutes of evidence taken before the committee appointed to consider of the state of the woollen manufacture of England, 1806 (268a) pp. 444-445.

⁴⁷¹ These were Thomas Read (a member of the New Subscription Library in 1805 and 1811). Benjamin Horsfall, Batley Royston, James Mallelieu, and Joshua Dixon. Crump, *Woollen Industry*, pp. 33-34.

together at the conclusion of the experiment. [...] From the above it appears that the quantity of water reduced to the state of steam from the boiler was nearly 250 gals per hour.⁴⁷²

The notebook in which these experiments were recorded belonged variously to Benjamin Gott's eldest son John Gott and his youngest son William. The entries dating between 1811 and 1815 (when the above experiment was most likely copied in neat) relate to William Gott's early forays and instruction in the trade of manufacturing which he would enter when he came of age. William Gott's instruction was overseen by Dixon who ensured he had a thorough advanced, technical knowledge of all the processes of manufacturing. This process was dependent upon reading, and involved answering questions and transcription from scientific texts. Part of Gott's education for instance involved transcribing an experiment taken from William Henry's *The Elements of Experimental Chemistry* (1799), and then answering a series of questions devised by Dixon on the experiment.⁴⁷³ Just as Benjamin Gott claimed in 1828, it appears from this account, that it was Gott's employees, and his sons who were to inherit the manufacturing business, rather than Gott himself who had the scientific and technical knowhow associated with manufacturing.

Yet it is likely that Benjamin Gott had at least some scientific knowhow when it came to the dyeing processes and experimentation ongoing at Park Mill in the early years of its operations. It is improbable for instance that Dixon and co were employed at the Mill much prior to 1800; Joshua Dixon, Gott's nephew was born in 1784 and would have been just eight in 1792/1793 when Gott was building the mill. Moreover, Gott's correspondence with James Lawson, the engineer who installed the Boulton and Watt engine at Park Mill, illustrates a demonstrable knowledge of the experiments on steam

⁴⁷² Leeds, Brotherton Library, MS 193/117 Bean Ing Mill Notebook of Prices and Processes, [c.1808-1825] Bound manuscript notebook, preceded by a printed foreword by A B Hunter. 9 September 1800, ff.33-57.

⁴⁷³ Leeds, Brotherton Library, MS 193/131 William Gott's Pattern Book, 1815. Manuscript notebook of dyehouse recipes, with samples of yarn and cloth inserted; Crump, *Woollen Industry* p. 286.

dyeing ongoing at the mill. In amongst a general letter from Gott to Lawson dated 6 April 1795, Gott demonstrates a little technical knowledge in relation to steam dyeing. In the letter he explains to Lawson that little improvement had been made to the speed at which water was boiling at the mill despite attempts to rectify a possible difficulty Lawson had communicated to the firm. The letter, moreover provides a clue to Gott's attempts to self-educate on the subject of dyeing and chemistry. More importantly, the letter shows that Gott was engaged in a process of scientific education. Gott's education was dependent on reading, and involved reading books on chemistry linked to the dyeing experiments ongoing at the Mill. In the letter Gott thanked Lawson for a copy of Antoine Francois Fourcroy's *The Philosophy of Chemistry*, explaining it was one of the clearest vocabulary books he had read on the subject.

Mrs Gott's health in which you do us the favour to take interest yourself is daily improving—In a few days she purposes to avail herself of the advantage of her native air.— *I thank you for Fourcroy's explanation of the new Nomenclature— it is one of the clearest books I have seen—should you go to London inform me—that I may take advantage of your judgement in any purchase I want—I hope your Box arrived safe and the blue top coat.—The main pipe for boiling the water has been cleared but it does not perform more speedily than when you was present— I presume the expansion of steam from the increased diameter: of the tube is one disadvantage to the experiment.*⁴⁷⁴

Thus even though no notebooks survive as they do for John Marshall, from piecing together the information contained in the early business records relating to Benjamin Gott as I have done in this section, it seems likely that Gott was engaged in the process of experimentation associated with the foray into manufacturing. This process involved direct experimentation in the Mill, correspondence with colleagues across the country, and occasional reading on the subject to further Gott's own practical knowledge of chemistry. Given what we know of John Marshall's research into the process of dyeing, it is plausible that Benjamin Gott too relied on the books to supplement the practical knowledge of manufacturing he gained on site. Moreover, Gott was a subscriber to both the Leeds Library (he joined in 1785 upon entering into his apprenticeship) and a

⁴⁷⁴ [Italics mine], Benjamin Gott to James Lawson, 6 April 1795, reproduced in W. Crump, *Woollen Industry*, p. 216.

founder member of the New Subscription Library in 1793. As was evident in chapter four, and earlier in this chapter, there were a considerable number of books on natural philosophy, chemistry and the mechanic arts in the Leeds Libraries. Gott could feasibly have made use of his membership of these libraries, particularly at a time of vast financial outlays which would have made expenditure on all but the necessities prohibitive, to gain access to these materials and learn a basic knowledge of the field.

6.5 Conclusion

This chapter has traced the reading experiences of John Marshall and Benjamin Gott in Leeds. It has shown that these manufacturers became scientifically and technically knowledgeable through a variety of means, not least of which was the act of reading scientific literature. These manufacturers utilised the scientific and manufacturing collections of the Leeds libraries for the purposes of education and the practical application of scientific knowledge to industry. Moreover, this chapter has illustrated the important role that print played in the process of scientific communication and scientific education in the late Georgian period. Looking to the future, it is important that scholars now undertake more research in this area, that they uncover more examples of manufacturers engaging in experimentation and reading scientific literature in other localities beyond Leeds.

Chapter 7

Conclusion

This thesis has explored the culture and society of eighteenth-century Leeds through a study of subscription library provision in the town between 1768 and 1815. It has considered the question of why subscription libraries emerged in the urban scene of the industrial towns of the north of England in the mid eighteenth century. Its innovative methodology, in the form of an analysis of the extant archives of Leeds's four subscription libraries, the Leeds Infirmary Library, the Leeds Library, the Foreign Library and the New Subscription Library, in combination with the reading experience of certain library subscribers, has revealed new insights into the purposes of libraries and reading in the late Georgian period. It has shown that subscription libraries had multiple functions and catered to many different needs and interests in late Georgian Leeds. Primarily, it has argued that their purposes included a strong practical component. They were places where professionals could access useful and technical information related to their area of expertise. Thus the important motivating factors in the establishment and development of subscription library collections were the educational and professional needs of library subscribers. Clubbability, sociability and conviviality, factors which have until now taken precedence in discussions of subscription libraries, had little impact on the decision to establish and develop subscription libraries in Leeds. Indeed, in Leeds these factors only came to prominence in the nineteenth century when ever-expanding library collections necessitated the purchasing of permanent library premises which were accompanied by social displays of wealth.

This study has also shown that there were parallel reasons for library membership among key occupational groups such as medical men, merchants and merchant-manufacturers in late Georgian Leeds. I examined the reading experiences of surgeon-apothecaries, and merchant-manufacturers in Georgian Leeds in chapters five and six of this thesis. An important argument resulting from the analysis of their reading

habits is that these practical men utilised the collections of the libraries for the useful information they contained, be it applicable to surgery or to the factory floor. They read printed material for occupation-specific purposes, combined the practical elements of wielding the scalpel, or operating machinery, with reading, and hence engaged in theoretical learning for personal and professional improvement. Just as medical men clubbed together to establish the Infirmary Medical Library for the purpose of purchasing the medical literature and journals containing the latest medical advances and techniques, so the collections of the town's other subscription libraries evolved to meet the specific demand from the town's manufacturing community. Chapters three and four of this thesis showed that scientific literature featured strongly in the printed collections of the subscription libraries alongside traditional forms of literature such as biography, travel, and history. Subscribing to the Leeds libraries thus meant that merchant-manufacturers could borrow and read literature relevant to their practical interests in manufacturing. In other words, subscription library membership provided the key means by which the town's merchant-manufacturers could access the technical knowledge and learn the industrial competence necessary to compete in the industrial marketplace. These findings have placed subscription libraries within the wider knowledge economy of the late Georgian period.

At the outset of this thesis I identified four key areas of research with which this study of Georgian Leeds would engage. These were the history of libraries and reading, the history of science and industry, the social history of medicine, and urban history. I will now show that this study has significant and far reaching implications for the historiography in each of these respective fields of research. Traditionally historians of library history have taken an institutional approach to their research. David Allan in *A Nation of Readers* for instance examines reading in Georgian England through the vehicles for reading, institutions such as book clubs, circulating libraries and subscription libraries. This thesis on the other hand, has studied the formation and development of subscription libraries in one individual town. Moreover, it has combined approaches from within with book history and the history of reading. Chapters three and four of the thesis partially combined the institutional approach to library history, with methodology

from the history of reading, and analysed catalogues, subscription lists and other sources to recreate the external reading experiences of library subscribers. The second half of the thesis, chapters five and six concentrated on recreating the reading experience of individuals in Leeds using a biographical approach and evidence of the internal history of reading such as diary accounts, medical case books and experiment logs. This approach has transformed our understanding of subscription libraries, and produced new findings about the practical and utilitarian purposes of these institutions and their collections. It remains to be seen to what extent these purposes were at play in establishment of subscription libraries in other industrial powerhouses of the north of England in the eighteenth century, or whether there is any correlation with the establishment of subscription libraries in Georgian towns such as York or Norwich, but this study provides the groundwork for similar approaches in the future.

I have equally made significant contributions to the history of medicine, and the history of science and industry. This thesis has improved our knowledge and understanding of provincial medicine. Leeds, with its Infirmary and its Medical Library, was an important centre of provincial medicine in the north of England in the late eighteenth century. The faculty of medicine at Leeds, including the practitioners in honorary positions at the Infirmary and those practising medicine more widely in the town were intent on improving the medical experience offered to patients in the town. The desire and determination among Leeds practitioners to improve medicine was inspired by the educational experiences of those Leeds medical men who in addition to their practical apprenticeship undertook further training at the metropolitan medical centres of London or Edinburgh. Here, they learnt the latest techniques in surgery and midwifery, attended anatomical lectures, and furthered their medical knowledge. They used texts and manuals to supplement this knowledge, and were encouraged to do so in practical disciplines such as anatomy, by anatomists including William Hunter. Upon returning to the provinces, they applied this knowledge to their treatment of patients, and shared this knowledge with others in the faculty, relying on one another for expertise. By this means was medical knowledge disseminated and advanced in Georgian Britain. This interplay between the learned text and practical profession has

expanded our knowledge and understanding of eighteenth-century medicine. It has created a bridge between studies of medical publishing in the early modern period, and in the nineteenth century, and has opened up a new area of research for future historians of medicine. In the eighteenth century, printed medical matter in the form of books, or journals published by the various medical societies in London and Edinburgh, was an important means by which the provinces kept abreast of developments in the profession. Reading the new information contained in these journals, which often took the form of case histories enabled a practitioner to stay in touch with the wider medical community and to improve his knowledge in the field. Expert practitioners such as William Hey or James Lucas of Leeds, acquired and continued to hone their skills once in practice by a combination of knowledge learnt through personal experience, during discussion with colleagues and by means of the reading of other practitioner's experiences in printed format. The Leeds practitioners then evaluated and applied this knowledge to their treatment of a patient, before engaging in the process again, thereby continuously honing their technique through practical and learned means.

This thesis has also shown that medical men from the provinces frequently engaged in this network of medical communication as authors, and moved from being consumers of printed knowledge to producers of new knowledge in the form of published articles. Hey and Lucas both communicated their case studies to medical societies in London, had their findings published in these journals, and hence contributed to the flowering of medical knowledge in the late eighteenth century. The findings from Leeds, although only from one town thus goes some way to challenging the still largely London-centric accounts of eighteenth-century medicine. Indeed while the journals may have been published in the metropolitan centres, the knowledge they contained was more often than not communicated from the provinces. Although it has been beyond the scope of this study to study this in detail, further engagement in book history and the history of reading among historians of medicine, for example by studying the contents of the medical journals and periodicals of the late Georgian period to see what information they contained and from whereabouts this knowledge was

communicated, would, reveal yet further insights about the nature of medicine in the eighteenth century.

Thirdly, this thesis has yielded important findings about the industrial enlightenment, by showing that the process of industrialisation in Leeds was inculcated in printed matter. Industrial entrepreneurs such as John Marshall and Benjamin Gott acquired their scientific and technical knowledge through a combination of practical experimentation and bookish learning. It has demonstrated that a study from the perspective of book history, library history and the history of reading can illuminate research by economic and cultural historians, and historians of science and technology, and that the methods and techniques from these fields of studies are applicable to, and should be used by the wider scholarly community at large. By engaging in the mechanics of the where, the how and the why, I have shown that historians of science including Ian Inkster, Margaret Jacob and Larry Stewart, should pay as much attention to libraries and reading as they do to public lectures, and scientific societies. Libraries were part of the scientific culture of late Georgian Leeds. The scientific collections they contained formed one of the primary means by which merchant-manufacturers in Leeds accessed the latest published scientific knowledge. Moreover, Manchester, Sheffield, Derby and Birmingham, all towns associated with scientific societies and institutions that contributed to a flowering of scientific culture in the late Georgian period, contained subscription libraries.⁴⁷⁵ Yet the contents of these libraries, and any scientific collections they held, are largely unstudied.⁴⁷⁶

Lastly, this thesis has emphasised the importance of a local approach and local research. It has shown that libraries can be used as a tool with which we can examine

⁴⁷⁵ Manchester (1765), Sheffield Book Club (1737), Sheffield Book Society (1771), Sheffield Subscription Library (1771), Birmingham (1779), Derby Book Society (1757), Derby Philosophical Library (1784), Birmingham Library (1779).

⁴⁷⁶ R.P. Sturges briefly analyses William Brooke Johnson's use of the Derby Philosophical Library collection in his article 'Derby Philosophical Society', pp. 222-224; but even in Musson and Robinson's monumental study of Manchester the town's subscription libraries receive just a half-page mention. Musson & Robinson, *Science and Technology* p. 113.

the culture and society of the late eighteenth century. It has added to the small pool of local studies on the eighteenth century including those on Birmingham by John Money, and Manchester and Sheffield by Hannah Barker. If we are to build up a national picture of social and cultural developments in the eighteenth century, of the process of enlightenment, which focuses beyond London, beyond the theories of improvement and politeness emanating from the south to the provinces, then we need more local studies from which to do so. This thesis alone has provided numerous insights into the town of Leeds in the period in which it transitioned from a merchant town to a regional hub for manufacturing and industry, from the medical and scientific culture of Leeds, to the importance of books and libraries, and the atmosphere of personal and civic improvement that pervaded the late Georgian town. Further focussed studies of urban culture in the north of England and beyond in the eighteenth century should similarly enlarge our understanding of urban development in the early industrial period.

Bibliography

Primary Sources

Unpublished Primary Sources

BRADFORD: WEST YORKSHIRE ARCHIVES

SpSt: Spencer Stanhope of Horsforth, Family and Estate Records

SpSt/11/5/1/2 Letter from William Hey of Leeds to Walter Spencer Stanhope in London 21 May 1785

CALDERDALE: WEST YORKSHIRE ARCHIVES

SH Lister Family of Shibden Hall, Family and Estate Records

SH 7/9: Anne Lister – Correspondence, Diaries, etc

SH7/6/1-26 Diaries (1806 – 1840)

SH 7/9/8 Extracts from books

DONCASTER: DONCASTER ARCHIVES

Doncaster Archives, MS Aldam, DD/WA

DD/WA/251 Proceedings of a Debating Club at Leeds, 1776-1780

LEEDS: SPECIAL COLLECTIONS, BROTHERTON LIBRARY, UNIVERSITY OF LEEDS

MS BUS/Jowitt: Robert Jowitt and Sons Limited, Business Archive (1775-1955)

MS BUS/Lupton: William Lupton and Company Limited, Business Archive (1694-1958)

BUS/Lupton/127: Business and Estate Papers 1755 - 1840s

BUS/Lupton/128: Miscellaneous papers 1720 - 1830s

BUS/Lupton/130: Estate papers 1790s - 1854

BUS/Lupton/131: Estate, Chapel and Infirmary papers 1694 - 1850s

MS 90: Catalogue of minerals, collected and arranged by Joseph Dawson of Royds Hall, Bradford

MS 184: Papers by William Hey F.R.S and related material (1783-1784)

MS 193: Gott papers, section I: business records (1770-1931)

193/6 Indenture of apprenticeship of Benjamin Gott to Messrs & Fountaine, 1st January 1780.

193/8 Rough draft of articles of agreement for co-partnership between John Wormald, Joseph Fountaine & Benjamin Gott, [1st January 1785.]

193/22-31: Erection of Park Mill at Bean Ings 1792 – 1794

193/32-73: Wormald, Fountaine & Gott : Business Letters 1792-1795.

193/74-84 Photostat copies of letters 1792-1796

193/85-89: Fountaine & Gott : Miscellaneous records 1795-1810

193/90 Letters of John Hopps

193/91-113 Wormald, Gott & Wormalds: Business letters 1800-1817

193/117 Bean Ing Mill Notebook of Prices and Processes, [c.1808-1825]

193/131 William Gott 's Pattern Book, 1815. Manuscript notebook of dyehouse recipes, with samples of yarn and cloth inserted

193/132-192 Benjamin Gott & Sons: Business letters. 1818 – 1847

193/ 28-235: Photostat copies of plans and sections of Park Mill and machinery

193/236-241 Original plans and sections of mills and machinery.

MS 194: Gott papers; section II: family records (c.1750-c.1941)

194/2: Benjamin Gott (1762-1840)

194/2/15 Rev. Charles Clapham to Benjamin Gott (1834)

194/2/17 Rev. Charles Clapham to Benjamin Gott (1836)

194/3: Elizabeth (Rhodes) Gott (1767-1857)

194/3/8 Elizabeth Gott; Diary, 16 February - 7 July [1809] and [at other end] 1 January - 8 May 1810.

194/3/16 Letterbook containing copies of letters from various people, mainly to Elizabeth Gott, in her hand. 1825-39. 194 Pages

194/3/17 Notebook [of Elizabeth Gott and William Gott, her son] containing lists of dinner guests, etc, 1822-57

194/3/22 "Inventory & valuation of sundry household effects of Miss Abigail Rhodes" (1845)

MS 200: Marshall and Co Business Records of Marshall and Co.

200/1 Book 1 John Marshall's private ledger, 1791-1840.

200/14/3 Single manuscript sheet explaining how Marshall made a trial of Kendrew machinery and what followed

200/14/7 'Extracted from J M's sketch of his life...' [The story of the firm 1769-1828. Manuscript]

200/15/15 Manuscript sheets. (a) Kendrew's patent, 19th June 1737 (b) Murray's patents, 1st June 1790; 18th December 1793.

200/15/29 Book list. Note on a Russian visitor on verso.

200/19/9 Kendrew & Porthouse's patent. [Office copy, Fenton, Boar Lane]

200/42 Notes on Booth's Philosophical Lectures

200/53 Notebook of experiments on spinning tow from June to October 1788, and other experiments on spinning and weaving, December 1788 and June 1790.

200/54 Notebook of experiments on spinning, July 1790 to June 1801

200/55 Notebook of experiments on bleaching, 1797 to 1802

200/56 Notebook of experiments on spinning, August 1803 to 1823

200/57 General notebook, c. 1790 to c. 1830 200/62 Tour book, Scotland, 1800; Ireland 1803.

200/63 Tour book, Cumberland and Scotland 1800 and 1827; Ireland 1803

200/64 Tour book, Scotland 1807 and 1821; Ireland 1829.

MS 268: Notes on medical and surgical cases treated by Dr William Hey

MS 504: Papers by William Hey, MRCS, relating to John Pearson's Life of William Hey, FRS

MS 567: Case histories in obstetrics in the Leeds area, compiled by William Hey.

Ms 622: Letters of Frank Beckwith

MS 628: Case histories in medicine and surgery in the Leeds area, 1763-1809, compiled by William Hey.

MS 1587: Medical Common-Place Book

MS 1591: Register of Circulation of the Library, 1802-1827

MS 1697: Account book for Middleton Colliery for the year 1806

MS Dep. 1951/1: Minute books and letter books of the Leeds Chamber of Commerce (1785-1938)

MS Dep. 1975/1: Papers and correspondence of the Leeds Philosophical and Literary Society

1975/1/1 General minute book of transactions, 1821-1841

1975/1/2 Laws and regulations, 1820; register of proprietary and ordinary members

1975/1/5 Council minute book, 1819-1822; contains also a list of proprietary and ordinary members.

1975/1/197 Twenty-four miscellaneous receipted bills, 1835 – 1837

1975/1/217: Philosophical papers of William Hey. FRS, (1736 - 1819)

1975/1/227 Thirty-three miscellaneous receipted bills 1834 – 1835

1975/1/228 Twenty-five miscellaneous receipted bills, 1836 – 1837

1975/1/229 Eighteen miscellaneous receipted bills. 1836 – 1838

1975/1/261 A register containing (i) A roughly alphabetical list of lecturers and their subjects, 1820-1921 ... (iv) List of Presidents of the Society, 1823 - 1910

MS Dep. 1990/4: Letters from Richard Walker to William Hey

LEEDS: LEEDS LIBRARY

Leeds Library Minute Book, Volume I, 1768-1799

Leeds Library Minute Book, Volume II, 1800-1879

Share Registers 1768-[]

Treasurer's Cash Book 1768-1853

Order Book of the Leeds Library 1811-1832

LEEDS: LEEDS THORESBY SOCIETY

MS IV/2, A Leeds Printer's Account Book 1790-97

LEEDS: WEST YORKSHIRE ARCHIVES

LL 3/1 Admission Book of the Leeds General Infirmary (1766-1828)

WYL:160 Dibb Lupton, Solicitors, Leeds, Clients' Records

160/27 John and Joseph Holroyd, dyers, Sheepscar

160/36 Denison and Bolland families, deeds and papers (1568-1854)

160/39 Rhodes family of Leeds, deeds and papers (1706-1864)

160/197 Leeds Pious Uses Committee, Minutes, Accounts & Other Records (1664 – 1934)

WYL383: Baines Papers

383/43 Articles of Agreement for the Sale of the Leeds Mercury

WYL1535: Miss Carr of Leeds, Letters from Miss C Gilpin of Pulverbatch and Miss R Hey and Miss M Hey of Leeds (1822-181)

WYL 2175: Humphrey Repton's Red Book for Armley House, Leeds

WYL 2295, Leeds General Infirmary, Records

2295/1 Quarterly Board meetings, minutes, 1767-1818

2295/3/1 Weekly Board meetings, minutes and lists of patients admitted & discharged 1776-1771; Weekly, Quarterly & Annual Board meetings, minutes 1779-1786

2295/3/2 Weekly Board meetings, minutes. Includes lists of patients admitted & discharged, 1768-1773

2295/3/3 Weekly Board meetings, minutes. Includes lists of patients admitted & discharged, 1773-1780

2295/3/4 Weekly Board meetings, minutes. Includes lists of patients admitted & discharged, 1781-1786

2295/3/5 Weekly Board meetings, minutes. Includes lists of patients admitted & discharged, 1786-1793

2295/3/6 Weekly Board meetings, minutes. Includes lists of patients admitted & discharged, 1793-1797

2295/3/7 Weekly, Quarterly & Annual Board meetings, minutes 1786-1805

2295/3/8 Weekly, Quarterly & Annual Board meetings, minutes 1806-1828

2295/5/1 LGI Faculty meetings, minutes 1824-1885

2295/13/1 Building committee meetings, minutes & loose papers (2 vols) 1768-1774

2295/27/1 LGI annual reports (1 vol) 1767-1858

2295/31/1 Letter book (in-letters) 1767-1773

2295/32/1 Letter of resignation of William Hey 8 Oct 1812

2295/32/3 Letter of resignation of Maurice Logan, Surgeon 1812

2295/53/1 Treasurer's cash account book (marked as "copy") 1767-1778

2295/53/2 Treasurer's cash account book 1778-1787

2295/53/3 Treasurer's cash account book (copy) 1782-1784

LIVERPOOL: LIVERPOOL CENTRAL LIBRARY

027 LYC - Records of the Liverpool Library, Lyceum

027 LYC 1/1/1 Liverpool Library General Committee 1768-1796

027 LYC 2/1 Liverpool Library Proposals Book 1777-1782

027 LYC 2/6 Proposals Book 1826-1827

027 LYC 3/1 Cash Book 1785-1792 [share register of subscribers]

LONDON: BRITISH LIBRARY

Add MS 33537-33546: Correspondence and papers of the family of Bentham

Add 33546: Correspondence Vol X. (ff. 624), 1824-1847.

LONDON: WELLCOME LIBRARY

MS 5203: Carr Family [Notebook. Kept by William Carr (b. 1715) from 1739]

MS 5204: Carr Family [Notebook. Kept by William Carr (1745-1821), the volume contains notes on apparatus for amputations, July 1774 [probably in connection with the Leeds Infirmary], lists of bills presented to the Infirmary's quarterly board, 1774-80, notes on medical cases, treatments, and fees, and on meetings of local practitioners, extracts from medical journals, and a diary, 1800-10.]

MS 5205: Notebooks. Kept by William Carr (1745-1821), the volume contains a diary and miscellaneous notes, 1810-21. With additions by William Carr (1785-1861), including

household and estate accounts, 1821-61. On the end papers, and ff. 76-77, are local obituary notes, 1810-28

MS 5206: Carr Family [Notebook kept by William Carr (1785-1861), containing prescriptions.]

MS 5207: H. Boerhaave, *Aphorismi de cognoscendis et curandis morbis* (Leiden, 1737), interleaved, with brief annotations in an unknown hand. Extensively reused by William Carr (1785-1861), mainly as a notebook for transcripts from published medical works, c. 1800-1834.

MS 7335/2-5: Miscellany: English, 18th century: James Lucas [3 autograph letters concerning Lucas's A candid inquiry into the education, qualifications and offices of a surgeon-apothecary (1800)]

Unique/Rare Copies of Published Primary Sources

England

CALDERDALE: WEST YORKSHIRE ARCHIVES

A Catalogue of the Books belonging to THE HALIFAX SUBSCRIPTION LIBRARY... instituted in 1767 (Halifax: N. Whiteley, MDCCCXXX)

MISC:49 HALIFAX CIRCULATING LIBRARY AND HALIFAX LITERARY AND PHILOSOPHICAL SOCIETY, RECORDS

Misc: 5/96a/79 'Proposals for Establishing a Circulating Library in Halifax, October 29, 1768'.

DONCASTER: DONCASTER ARCHIVES

DD/WA/B1/15, Copies of the Leeds Improvement Acts of 1755, 1790, 1809 and 1815, owned by William Benson.

LEEDS: LEEDS CENTRAL LIBRARY

A catalogue of the books, in the foreign circulating-Library, at Leeds: with a list of subscribers (Leeds: printed by Thomas Gill, 1795)

A catalogue of the books, in the subscription library, in Albion-Street, Leeds: A supplement to the catalogue of books, in the circulating-library, at Leeds (Leeds: printed by Edward Baines, [1802-1806])

A complete catalogue of the books in the Leeds Library, a copy of the laws as they are now in force, and a list of the subscribers [1817] (Leeds: printed by B. Dewhirst, 1817)

A Catalogue of the Library forming part of the Gott Heirlooms from Armley House, Leeds [1894]

Leeds Book Auction Catalogues (Leeds: [1836-1871])

LEEDS: LEEDS LIBRARY

Laws for the Regulation of the Circulating-Library in Leeds: and a Catalogue of the Book Belonging to it, To which are prefixed The Names of the Subscribers (Leeds: Printed by Griffith Wright, 1768)

A supplement to the Laws and Catalogue of the Circulating Library in Leeds, for the year 1769 (Leeds, 1769)

A supplement to the Laws and Catalogue of the Circulating Library in Leeds, for the year 1770 (Leeds, 1770)

A supplement to the Laws and Catalogue of the Circulating Library in Leeds, for the year 1771 (Leeds, 1771)

A supplement to the Laws and Catalogue of the Circulating Library in Leeds, for the year 1772 (Leeds, 1772)

A Compleat Catalogue of the Books in the Circulating-Library at Leeds; A Copy of the Laws As they are now in Force; and a List of the Subscribers (Leeds: Printed by G. Wright & son, 1778)

A Compleat Catalogue of the Books in the Circulating-Library at Leeds; A Copy of the Laws As they are now in Force; and a List of the Subscribers, To which are attached A Catalogue of the Books in the Foreign Circulating Library at Leeds, with a list of the Subscribers (Leeds: Printed by J. Bowling in Boar Lane, 1782)

A Compleat Catalogue of the Books in the Circulating-Library at Leeds; A Copy of the Laws As they are now in Force; and a List of Subscribers (Leeds: Printed by Thomas Wright, 1785)

Proposal for a New Subscription Library. Broadside 1793.

A Compleat Catalogue of the Books in the Circulating Library at Leeds: A Copy of the Laws as they are now in force, and A List of Subscribers (Leeds, Printed by Thomas Gill, 1802).

A Catalogue of Books in the New Subscription Library in Albion Street Leeds (Leeds: Edward Baines, 1805)

A supplement to the Catalogue of Books in the Circulating- Library at Leeds (Leeds: E. Baines, 1806)

A Compleat Catalogue of Books in the Leeds Library (Leeds: J.H. Leach, 1809)

Handbill of the Leeds Library dated 4 June 1810

A Catalogue of the Books in the New Subscription Library in Albion Street Leeds (Leeds: E. Baines, 1811)

A Compleat Catalogue of the Books in the Foreign Circulating Library at Leeds, with the Laws and a list of the Subscribers (Leeds, Printed by B. Dewhirst, 1811).

Addenda to the Catalogue of the Books in the New Subscription Library in Albion Street Leeds (Leeds: E. Baines, 1814)

Addenda to the Catalogue of the Books in the New Subscription Library in Albion Street Leeds (Leeds: E. Baines, 1818)

A Catalogue of Books in the New Subscription Library in Albion Street, Leeds (Leeds, 1821)

Addenda to the Catalogue of Books in the New Subscription Library in Park-Row, Leeds (Leeds: Printed by J.C. Vickers, 1825)

A supplement to the Laws and Catalogue of the Circulating Library in Leeds, for the year 1839 (Leeds, 1839)

A supplement to the Laws and Catalogue of the Circulating Library in Leeds, for the year 1843 (Leeds, 1843)

A Catalogue of the Books in the New Subscription Library in Park Row Leeds (Leeds: H. Walker, 1843)

A supplement to the Laws and Catalogue of the Circulating Library in Leeds, for the year 1846 (Leeds, 1846)

LEEDS: WEST YORKSHIRE ARCHIVES

The Annual Report of the State of the General-Infirmery at Leeds, From September 29, 1774, to September 29, 1775 (Leeds: printed for private circulation, 1775)

LIVERPOOL: LIVERPOOL CENTRAL LIBRARY

A Catalogue of the books in the Liverpool Library [1760]

A Catalogue of the books in the Liverpool Library [1770]

A Catalogue of the books in the Liverpool Library [1773]

Appendix to the Catalogue of the books in the Liverpool Library [1774]

A Catalogue of the books in the Liverpool Library, to which are prefixed, the laws and regulations and a list of subscribers [1777]

A Catalogue of the books in the Liverpool Library [1781]

A Catalogue of the books in the Liverpool Library [1792]

Fourth Appendix to the Catalogue of the books in the Liverpool Library [1799]

Catalogue of Willan's British and Foreign Public Library, Bold Street, Liverpool, [ca. 1820]

LONDON: BRITISH LIBRARY

Marshall, John, *The Economy of Social life. For the use of Schools.* (London: 1825)

LONDON: WELLCOME LIBRARY

A catalogue of a valuable collection of books, being the entire library of Dr. Fearne, of Leeds, (lately deceased) with a good modern collection of new books, prints, &c. (Leeds : E. Greenwood, [ca. 1795])

YORK: YORK MINSTER LIBRARY

Supplement to the Catalogue of Books in the Circulating-Library at Leeds (Leeds: printed by Thomas Gill, 1796)

United States of America*NEW BRUNSWICK: SPECIAL COLLECTIONS, ALEXANDER LIBRARY, UNIVERSITY OF RUTGERS*

An Alphabetical Catalogue of the Books in the Medical-Library at Leeds; A Copy of the Laws, and a List of the Subscribers (Leeds: J. Bowling, 1784)

Newspapers and Periodicals

Annals of Medicine

Edinburgh Medical and Surgical Journal

Foreign Medical Review

The Leeds Correspondent: A Literary, Mathematical and Philosophical Miscellany

Leeds Intelligencer

Leeds Mercury

Liverpool Daily Post

London Medical Journal

London Medical and Physical Journal

Medical Commentaries

Medical and Physical Journal

Medical and Chirurgical Review

Medical Essays and Observations

Medical Facts and Observations

Medical Magazine, or General Repository of Practical Physic and Surgery

Medical Observations and Inquiries

Medical Transactions (Royal College of Physicians)

Memoirs of the Medical Society of London

Monthly Magazine and British Register

Other Printed Primary Sources and Pre-1900 Scholarship

An Account of the Aberdeen Medical Society containing the Laws, Regulations and co, also a Catalogue of the Library (Aberdeen: Burnett and Rettie, 1796)

An Account of the Proceedings of the Merchants, Manufacturers, and others, concerned in the Wool and Woollen Trade of Great Britain, in their application to Parliament (London, 1800)

Alanson, Edward, *Practical Observations on Amputation and After-Treatment*, (London, 1779)

Bailey, William, *Bailey's British Directory: or merchant's and trader's useful companion, for the year 1784, in four volumes* (London: J. Andrews, 1784)

Bailey, William, *Bailey's Northern Directory, for the year 1781* (Warrington: Ashton, 1781)

Baines, Edward, *Directory of Leeds* (1809)

— *Directory of Leeds* (1814)

— *Directory, general and commercial, of the town & borough of Leeds, for 1817, containing an alphabetical list of the merchants, manufacturers, tradesmen, and inhabitants* (Leeds: Baines, 1817)

— History, directory and gazetteer of the county of York (Leeds: Leeds Mercury Offices, 1822)

Baines, Edward, *The Life of Edward Baines: late M. P. for the borough of Leeds* (London: Longman, Brown, Green and Longmans, 1851)

Bell, Benjamin, 'The Life, Character and Writings of William Hey of Leeds', *Edinburgh Medical Journal*, XII (1886-7), 1061-1080

Binns, and Brown, *A New and Complete Directory for... Leeds* (1800)

Bischoff, J.A., *A Comprehensive History of the Woollen and Worsted Manufactures* (London: 1842)

Boswell, James, *The Life of Samuel Johnson*, (London, Printed by H. Baldwin for C. Dilly, 1791)

Bradley, Thomas, *The Old Coaching Days in Yorkshire* (Leeds: Yorkshire Conservative Newspaper Co., 1889; repr. Otley: Smith Settle, 1988)

Britton, John, and Edward Brayley, *The Beauties of England and Wales, or, Delineations, Topographical, Historical, and Descriptive, of Each County* 9 vols (London: Printed by Thomas Maiden, 1801-1816)

Bromfeild, W., *Chirurgical Observations and Cases* (London: Printed for T. Cadell, 1773)

Butterworth, Edwin, *A Statistical Sketch of the County Palatine of Lancaster* (London: Longman & Co, 1841)

Crosse, John, *An account of the rise and progress of the subscription library at Kingston Upon Hull* (Hull: Hull Subscription Library, 1810)

The Diary of Thomas Butler of Kirkstall Forge, Yorkshire, 1796-1799 (London: Chiswick Press, 1906)

Defoe, Daniel, *A tour thro' the whole island of Great Britain, divided into circuits or journies* (London: JM Dent and Co, 1927).

Dobson, Matthew, *A Medical Commentary On Fixed Air* (Chester: Printed by J. Monk, 1779)

Ferguson, James, *Young Gentleman and Ladies Astronomy* (London: T. Cadell, 1768)

Gregory, O., *A Treatise of Mechanics: Theoretical, Practical and descriptive* (London: Printed for G. Kearsley, 1806)

Hey, William, *Observations on the Blood* (London: Printed for J Wallis, 1779)

— — *Practical Observations in Surgery* (London: T. Cadell and W. Davies, 1803)

Jackson's New Illustrated Guide to Leeds and Environs (Leeds: Richard Jackson, 1889; repr. Leeds: Old Hall Press, 1990)

The Journeys of Celia Fiennes, ed. by C. Morris (1947)

Langdon, Miss, *A brief memoir of the Rev. Thomas Langdon, Baptist Minister, of Leeds* (London: Simpkin, Marshall & co.; Baines & Newsome, 1837)

Lucas, James, 'An Account of a Singular Case', *Medical Observations and Inquiries*, 5, (1776), 73-81

— — 'On the Amputation of the Ankle With a flap', *Medical Observations and Inquiries*, 5, (1776), 323-328

— — *A Candid Inquiry into the Education, Qualifications and Offices of a Surgeon-Apothecary* (Bath: S. Hazard, 1800)

— — 'On Cataracts', *Medical Observations and Inquiries*, 6, (1784), 250-265

— — 'Remarks upon Peculiarities in the Human System, apparently arising from Diseases before Birth', *Memoirs of the Medical Society of London*, IV, (London: Charles Dilly, 1795), 94-102

Luccock, John, *The nature and property of wool, illustrated: with a description of the English fleece* (Leeds: Baines, 1805)

Mayhall, John, *The Annals and History of Leeds: and other places in the county of York: from the earliest period to the present time* (Leeds: J. Johnson, 1860)

Meade, Richard, *The Coal and Iron Industries of the United Kingdom* (London: Crosby Lockwood, 1882)

Memoirs of Dr. Joseph Priestley to the year 1795 / written by himself ; with a continuation to the time of his decease, by his son Joseph Priestley ; and observations on his writings, ed. by Thomas Cooper and William Christie, (London, printed for J. Johnson, 1806)

Morgagni, Giovanni Battista, *The Seats and Causes of Diseases Investigated by Anatomy*, trans. by Benjamin Alexander, 3vols (London: Printed for A. Millar, and T. Cadell, 1769)

Northern, John, *Observations on the Human Teeth* (Leeds: John Northern, 1810)

Parsons, Edward, *The Civil, Ecclesiastical, Literary, Commercial, and Miscellaneous History of Leeds, Halifax, Huddersfield, Bradford, Wakefield, Dewsbury, Otley, and the Manufacturing District of Yorkshire* (Leeds: Hobson, 1834)

Parsons, William and William White, *Annals, History, and Guide, of Leeds and York: together with all the towns and villages of the Clothing District of Yorkshire* (Leeds: Baines, 1830)

Pearson, John, *Life of William Hey* (London: Hurst, Robinson & c., 1822)

Pendred, John, *Vade Mecum* (London: 1785)

Plowden, Francis, *A Short History of the British Empire During the Last Twenty Months: Viz From May 1792 to the Close of the Year 1793* (Dublin, P. Byrne, 1794)

Priestley, Joseph, *The English Grammar, with Notes and Observations, for the Use of those who have made some Proficiency in the Language* (London: J. Johnson, 1768)

— *An Essay on the Course of Liberal Education for Civil and Active Life, with Plans of Lectures on the Study of History and General Policy, on the History of England, and on the Constitution and Laws of England* (London, 1765)

— *The Rudiments of English Grammar, to which are added, Observations on Style and Specimens of English Composition, adapted to the use of Schools* (London: printed for R. Griffiths, 1761)

Priestley, Robert, *Directions for taking Dr. Priestley's anti-bilious powders* (Leeds: T. Gill, [1798])

— *A few interesting remarks on bilious disorders, particularly the jaundice and yellow fever ... recommending the anti-bilious powder, a certain and experienced remedy* (Leeds: T. Gill, [1798])

Reid, T. Wemyss, *A memoir of John Deakin Heaton, M.D. of Leeds* (London: Longmans, Green and Co, 1883)

Report from the Committee on the Woollen Manufacture of England; &c. 1806. (London: 1806)

Robinson, Percy, *Leeds Old and New: a picturesque sketch of the city from the earliest times to the present day* (Leeds: Jackson, 1926),

— *Relics of Old Leeds* (Leeds: Percy Robinson, 1896; repr. Leeds: Old Hall Press, 1993)

Ryley, John, *The Leeds Directory* (1797)

A Select Catalogue of Books in the Library belonging to the Warrington Academy (Warrington, 1775)

Select Committee of the House of Lords, *State of British Wool Trade: Report, Minutes of Evidence, Appendix, Index*, 8 July 1828 (515) VIII.

Spence, C.S. *Memoirs of eminent men of Leeds* (London: G.J. Berger; Leeds: D. Green & Sons [1868])

Simmons, Samuel Foart, *Medical Register for the Year 1779* (London: Printed for J. Murray, 1779)

— *Medical Register for the Year 1780* (London: printed for Fielding and Walker, 1780)

— *Medical Register for the Year 1783* (London: Printed for J. Johnson, 1783)

Smith, D.A., *Notes on Mr. William Bromfield's two volumes of chirurgical observations and cases: with an appendix addressed to Dr. Lawrence* (London: T. Longman, 1773)

Tasso, Di Tor, *Gerusalemme Liberata* (Geneva, 1615)

Taylor, R.V., *The Biographia Leodiensis: or, Biographical sketches of the worthies of Leeds and neighbourhood* (London: Simpkin, Marshall, & co, 1865)

The Theological and Miscellaneous Works of Joseph Priestley ed. by John Towill Rutt, 13 vols (London: G. Smallfield, 1817-32), I (1817)

Wardell, James, *The Antiquities of the Borough of Leeds: Described and Illustrated* (London: John Russell Smith; Leeds: Moxon and Walker, 1853)

— *The Municipal History of the Borough of Leeds* (London: Longman and Brown; Leeds: Walker, 1846)

Wellbeloved, Charles, *Memoirs of the Life and Writings of the late Rev. W. Wood, F.L.S* (London: J. Johnson, 1809)

Whitaker, Thomas Dunham, *Loidis and Elmete: or an attempt to illustrate the districts described in those words by Bede; and supposed to embrace the lower portions of Aredale [sic] and Wharfdale, together with the entire vale of Calder, in the county of York* (Leeds: printed for private circulation, 1816)

White, Charles, *Cases in Surgery with Remarks [...] to which is added, An Essay on the Ligature of the Arteries by J. Aikin, Surgeon.* (London: Printed for W. Johnston in Ludgate Street, 1770)

White, William, *An Essay on the Diseases of the Bile* (York: C. Etherington, 1771)

Wilson, George, *A New and Complete Directory for the Town of Leeds* (Leeds, 1807)

Wilson, Joseph, *Bibliotheca curiosa: or, a catalogue of very choice books* (Leeds: James Lister, 1749)

Wood, J., *The elements of optics: designed for the use of students in the university* (Cambridge: Printed by J. Burges, 1801)

Woollen Manufacturing in Yorkshire: The Memorandum Books of John Brearley, Cloth Frizzer at Wakefield, 1758-1762, ed. by John Smail (Woodbridge: Boydell, 2001)

Young, Arthur *A Six Months Tour through the North of England* (London: Strahan, 1770)

Secondary Sources

Abbas, Hyder, ‘“A Fund of entertaining and useful Information’: Coffee Houses, Early Public Libraries, and the Print Trade in Eighteenth-Century Dublin’, *Library and Information History*, 30:1 (February 2014), 41-61

Allan, David, ‘The Advantages of Literature’: The Subscription Library in Georgian Britain’ in *The Meaning of the Library: A Cultural History* ed. by Alice Crawford (Princeton; Woodstock: Princeton University Press, 2015), pp. 103-123

— *Commonplace Books and Reading in Georgian England* (Cambridge: Cambridge University Press, 2010)

— ‘Eighteenth-Century Private Subscription Libraries and Provincial Urban Culture: The Amicable Society of Lancaster, 1769-c.1820’ *Library History*, 17 (2001), 57-76

— *A Nation of Readers: The Lending Library in Georgian England* (London: The British Library, 2008)

— ‘Opposing Enlightenment: Reverend Charles Peters’s Reading of the Natural History of Religion’, *Eighteenth Century Studies*, 38:2 (2005), 301-321

— ‘Politeness and the Politics of Culture: An Intellectual History of the Eighteenth-Century Subscription Library’, *Library and Information History* 29:3 (August 2013), 159-169

— ‘Provincial Readers and Book Culture in the Scottish Enlightenment: The Perth Library, 1784 – c. 1800’, *The Library*, 3 (2002), 367-389

— ‘A Reader Writes: Negotiating *The Wealth of Nations* in an Eighteenth-Century English Commonplace Book’, *Philological Quarterly*, 83 (2004), 207-233

— ‘The Scottish Enlightenment and the Readers of Late Georgian Lancaster: ‘Light in the North’’, *Northern History*, XXXVI:2 (2000), 267-281

— ‘The Scottish Enlightenment and the Politics of Provincial Culture: The Perth Literary and Antiquarian Society, ca. 1784 – 1790’, *Eighteenth Century Life*, 27 (2003), 1-30

Altick, Richard, *The English Common Reader: A Social History of the Mass Reading Public, 1800-1900* 2nd edn (Columbus: Ohio State University Press, 1998)

— ‘The English Common Reader: From Caution to the Eighteenth Century’, in *The Book History Reader*, ed. by David Finkelstein and Alistair McCleery, 2nd edn (Abingdon: Routledge, 2006), pp. 440-449

Anning, Stephen T., *The General Infirmary at Leeds, Volume 1: The First Hundred years 1767-1869* (London: E. & S. Livingstone, 1963)

— *The History of Medicine in Leeds* (Leeds: Maney, 1980)

— ‘The History of Medicine in Leeds’ *Proceedings of the Literary and Philosophical Society: Literary and Historical Section*, 16 (1978), 203-246

— ‘Leeds House of Recovery’, *Medical History*, 13:3 (1969), 226-236

— ‘A Medical Case Book: Leeds 1781-1784’, *Medical History*, 28 (1984), 420-431

Anning, Stephen T., and W.J.K. Wallis, *A History of the Leeds School of Medicine One and a Half Centuries, 1831-1981* (Leeds: Leeds University Press, 1982)

Ashton, T.S. *Iron and Steel in the Industrial Revolution 1760-1830* (Manchester: Manchester University Press, 1963).

Barker, Hannah, *The Business of Women: Female Enterprise and Urban Development in Northern England, 1760-1830* (Oxford: Oxford University Press, 2006)

— *Newspapers, Politics, and Public Opinion in Late Eighteenth-Century England* (Oxford: Oxford University Press, 1998)

— “Smoke cities’: northern industrial towns in late Georgian England’ *Urban History* 31:2, (2004), pp. 175-190

Barry, Jonathan, ‘Piety and the Patient: Medicine and Religion in Eighteenth Century Bristol’ in *Patients and Practitioners: Lay Perceptions of Medicine in Pre-Industrial Society*, ed. by Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 145-175

— ‘Provincial Town Culture, 1640–1780: Urbane or Civic?’, in *Interpretation and Cultural History*, ed. by Joan H. Pittock and Andrew Wear (Basingstoke, 1991), pp. 198-233

Beale, Norman, *Joseph Priestley in Calne* (East Knoyle: Hobnob Press, 2008)

Beavan, Iain, ‘Forever Provincial?: A North British Lament’, in *Periodicals and Publishers: The Newspaper and Journal Trade 1750-1914*, ed. by John Hinks, Catherine Armstrong and Matthew Day, (New Castle, DE: Oak Knoll Press; London: British Library, 2009), pp. 1-20

Beckett, J.V., ‘Libraries and the Victoria County History’, *Library and Information History*, 25:4 (2009), 217-226

Beckwith, Frank, ‘The Eighteenth-Century Proprietary Library in England’, *Journal of Documentation*, 3 (1947), 81-98

— ‘Leeds Baptists of the Eighteenth Century’, *Baptist Quarterly* IX (1938-9), 488-495

— *The Leeds Library 1768-1968* (Leeds: Private Circulation, 1968; repr. Leeds: The Leeds Library, 1994)

Beer, Gillian, ‘Science and Literature’, in *Companion to the History of Modern Science*, ed. by R.C. Olby and others, (London: Routledge, 1990), pp. 783-798

Bell, Maureen and John Hinks, ‘The English provincial book trade: evidence from the British book trade index’, in *The Cambridge History of the Book in Britain, Volume V 1695-1830* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), pp. 335-351

Beresford, Maurice, *The Leeds Chambers of Commerce* (Leeds: Leeds Incorporated Chamber of Commerce, 1951)

— *East End, West End: The Face of Leeds during Urbanisation, 1684-1842* (Leeds: Thoresby Society, 1988)

— 'The Face of Leeds 1780-1914', in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 72-112

— *Leeds Directories and Guides, 1781-1888 : A Checklist* (Leeds: s.n., 1988)

— *Leeds in the Seventeenth and Early Eighteenth Centuries* (Leeds: Thoresby Society, 2008)

— 'Prometheus Insured: The Sun Fire Agency in Leeds during Urbanization, 1716-1826', *Economic History Review*, 35 (1982), 373-389

Berg, Maxine, *Luxury and Pleasure in Eighteenth-Century Britain* (Oxford: Oxford University Press, 2005)

— *The Age of Manufacturers, 1700-1820: Industry, Innovation and Work in Britain* 2nd edn (London, NY: Routledge, 1994; repr. 1996)

Berry, Helen, '“Nice and Curious Questions”: Coffee Houses and the Representations of Women in John Dunton’s Athenian Mercury', *Seventeenth Century*, 12 (1997), 257-276

Bickerton, Thomas, *History of the Liverpool Medical Institution in special relation to the question of the lease* (Liverpool, 1904)

Black, Jeremy, *The English Press 1621-1861* (Stroud: Sutton Publishing, 2001)

Bonser, Kenneth J., and Harold Nichols, eds, *Printed Maps and Plans of Leeds, 1711-1900* (Leeds: Thoresby Society, 1960)

Booth, C.C., 'Medical Communication the Old and the New: The Development of Medical Journals in Britain', *British Medical Journal*, 285 (1982), 105-108

Borsay, Anne, *Medicine and charity in Georgian Bath : a social history of the General Infirmary, c.1739-1830* (Aldershot: Ashgate, 1999)

Borsay, Peter, 'Bath: An Enlightenment City?' in *New Directions in Urban History: Aspects of European art, health, tourism and leisure since the Enlightenment*, ed. by Peter Borsay, Guntham Hirschfelder and Ruth. E Mohrmann (New York: Munster, 2000), pp. 3-18

— 'The Culture of Improvement' in *The Eighteenth Century 1688-1815*, ed. by Paul Langford (Oxford: Oxford University Press, 2002), pp. 181-210

— *The English Urban Renaissance: Culture and Society in the Provincial Town 1660-1770* (Oxford: Clarendon Press, 1989)

— 'The English Urban Renaissance: The Development of Provincial Urban Culture, c.1680-c.1760', in *The Eighteenth-Century Town: A Reader in English Urban History, 1688-1820*, ed. by Peter Borsay (London: Longman Group, 1990), pp. 159-187

Borsay, Peter, and Lindsey Proudfoot, 'The English and Irish Urban Experience, 1500-1800: Change, Convergence and Divergence', in *Provincial Towns in Early Modern England and Ireland: Change, Convergence and Divergence* (Oxford: Oxford University Press, 2002), pp. 1-28

Bowd, Rebecca, 'Useful Knowledge or Polite Learning? A Reappraisal of Approaches to Subscription Library History', *Library and Information History* 29:3 (August 2013), 182-195

Bradford, Eveleigh, *Headingley: 'this pleasant rural village': clues to the past* (Huddersfield: Northern Heritage Publications, 2008)

Brewer, John, *The Pleasures of the Imagination: English Culture in the Eighteenth Century* (London: Harper Collins, 1997)

— 'Part II: Commercialization and Politics' in *The Birth of a Consumer Society: The Commercialization of Eighteenth-Century England*, ed. by Neil McKendrick, John Brewer and J.H. Plumb (London: Hutchinson, 1993), pp. 197-264

Bridge, Derek, 'Libraries in Halifax from the Seventeenth Century to the Twentieth Century', *Transactions of the Halifax Antiquarian Society*, 7, (1999), 38-50

British Literary Magazines ed. by Alvin Sullivan, 4 Vols (New York; London: Greenwood, 1983-6)

Brock, Helen C., 'The Happiness of Riches', in *William Hunter and the Eighteenth-Century Medical World* ed. by W.F. Bynum and Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 35-56

Brock, W.H., 'Science Education' in *Companion to the History of Modern Science*, ed. by R.C. Olby and others, (London: Routledge, 1990), pp. 946-959

Brooks, Ann, and Bryan Haworth, *Boomtown Manchester, 1800-1850: The Portico Connection* (Manchester: Portico Library, 1993)

Brown, Michael, *Performing Medicine: Medical culture and identity in provincial England, c.1760-1850* (Manchester: Manchester University Press, 2011)

Brown, Stephen, 'The Market for Murder and Edinburgh's Eighteenth-Century Book Trade', in *Periodicals and Publishers: The Newspaper and Journal Trade 1750-1914*, ed. by John Hinks, Catherine Armstrong and Matthew Day, (New Castle, DE: Oak Knoll Press; London: British Library, 2009), pp.21-43

Bunch, Antonia J., *Hospital and Medical Libraries in Scotland: An Historical and Sociological Study* (Glasgow: Scottish Libraries Association, 1975)

Burt, Steven, and Kevin Grady, *The Illustrated History of Leeds* (Derby: Breedon Books, 1994)

— *The Merchant's Golden Age: Leeds 1700-1790* (Leeds, 1987).

Butterton, Joan R., 'The Education, Naval Service and Early Career of William Smellie', *Bulletin of the History of Medicine*, 60:1 (1986), 1-18

Bynum, W.F., and Janice C. Wilson, 'Periodical Knowledge: Medical Journals and their editors in nineteenth-century Britain', in *Medical Journals and Medical Knowledge: Historical Essays*, ed. by W.F. Bynum, Stephen Lock and Roy Porter, (London: Routledge, 1992), pp. 29-48

Bynum, W.F., 'Physicians, Hospitals and Career Structures in Eighteenth-Century London', in *William Hunter and the Eighteenth-Century Medical World* ed. by W.F. Bynum and Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 105-128

Carter, Philip, *Men and the Emergence of Polite Society, Britain 1660-1800* (Harlow: Pearson Education Limited, 2001)

Chalkin, C. W., *The provincial towns of Georgian England: a study of the building processes 1740-1820* (London: Edward Arnold, 1974).

Chalmers, John, 'Andrew Duncan Senior (1744-1828): A Biographical Overview', in *Andrew Duncan Senior: Physician of the Enlightenment*, ed. by John Chalmers, (Edinburgh: National Museums Scotland, 2010), pp. 1-35

— 'Duncan's Therapeutics', in *Andrew Duncan Senior: Physician of the Enlightenment*, ed. by John Chalmers, (Edinburgh: National Museums Scotland, 2010), pp. 90-99

Chalmers, Iain, Ulrich Trohler, and John Chalmers, 'Medical and Philosophical Commentaries and its Successors', in *Andrew Duncan Senior: Physician of the Enlightenment*, ed. by John Chalmers, (Edinburgh: National Museums Scotland, 2010), pp. 35-55

Chartier, Roger, 'Labourers and Voyagers: From the Text to the Reader', in *The Book History Reader*, ed. by David Finkelstein and Alistair McCleery, 2nd edn (Abingdon: Routledge, 2006), pp. 87-98

Chartier, Roger, *The order of books: readers, authors, and libraries in Europe between the fourteenth and eighteenth centuries* (Cambridge: Polity, 1994)

Chartier, Roger and Guglielmo Cavallo, *A History of Reading in the West*, transl. by Lydia G. Cochrane (Oxford: Polity Press, 1999)

Chartres, John, 'Leeds: Regional Distributive Centre of Luxuries in the Later Eighteenth Century' *Northern History*, 37 (2000), 115-132

— 'Spirits in the North-East? Gin and Other Vices in the Long Eighteenth Century' in *Creating and Consuming Culture in North-East England, 1660-1830* ed. by Helen Berry and Jeremy Gregory (Ashgate: Aldershot, 2004), pp. 37-56

Chilton, C. W., *Early Hull Printers and Booksellers: An Account of the Printing, Bookselling and Allied Trades from Their Beginnings to 1840* (Kingston-upon-Hull: Kingston-upon-Hull City Council, 1982)

Christie, J.R.R 'The Development of the Historiography of Science', in *Companion to the History of Modern Science*, ed. by R.C. Olby and others, (London: Routledge, 1990), pp. 5-22

Clark, Edwin Kitson, *The History of 100 years of Life of the Leeds Philosophical and Literary Society* (Leeds: Jowett & Sowry, 1924)

Clark, Peter, *British Clubs and Societies 1580-1800: the origins of an associational world* (Oxford: Clarendon Press, 2000)

Clark, Peter and R.A. Houston, 'Culture and Leisure 1700-1840', in *The Cambridge Urban History of Britain* ed. by Peter Clark, Martin Daunton and D.M. Palliser, 3 Vols (Cambridge: Cambridge University Press, 2000), II (2000), pp. 575-614

Clow, Archibald, and Nan. L. Clow, 'Vitriol in the Industrial Revolution', *Economic History Review*, XV (1945), 45-55

Colclough, Stephen M., 'Procuring books and Consuming Texts: The reading experience of a Sheffield Apprentice 1798', *Book History*, 3 (2000), 21-44

Connell, E.J., and M. Ward, 'Industrial Development, 1780-1914', in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 142-176

Cooksey, Pamela, *Joseph Wood (1750-1821): A Yorkshire Quaker: An Introduction to his Life, Ministry and Writings* (York: Quacks Books, 2010)

Corfield, Penelope J., *The Impact of English Towns 1700-1800* (Oxford: Oxford University Press, 1982)

— *Power and the Professions in Britain 1700-1850* (London: Routledge, 1995)

Cottam, Sue, 'What was the Relationship between Élite Culture and Power between 1760 and 1820 in the Town of Leeds?' *The Publications of the Thoresby Society* 14 (2004), 18-36

Crawford, John C., *The Wanlockhead Miners' Library: A Guide Book* (Wanlockhead: Wanlockhead Museums Trust, 2004)

Crosland, Maurice, *In the Shadow of Lavoisier: The Annales De Chimie and the Establishment of a New Science* (London: British Society for the History of Science, 1994)

Crump, W. B., (ed), *The Leeds Woollen Industry 1780-1820* (Leeds, The Thoresby Society, 1931)

Cunningham, Andrew, *The Anatomist Anatomis'd: An Experimental Discipline in Enlightenment Europe* (Farnham: Ashgate Publishing Limited, 2010)

Darnton, Robert, *The Kiss of Lamourette: Reflections in Cultural History* (London: Faber and Faber, 1990)

— 'What is the History of Books?', *Daedalus* 111/3, (1982), 65-83

— 'What is the History of Books?', in *The Book History Reader*, ed. by David Finkelstein and Alistair McCleery, 2nd edn (Abingdon: Routledge, 2006), pp. 9-26

Daunton, Martin, *Progress and Poverty: An Economic and Social History of Britain, 1700-1850* (Oxford: Oxford University Press, 1995)

— 'The Wealth of the Nation' in *The Eighteenth Century 1688-1815*, ed. by Paul Langford (Oxford: Oxford University Press, 2002), pp. 141-180

Davies, John G., *From Bridge to Moor: The History of Leeds Grammar School from its foundation to 1854* (Leeds: Leeds Grammar School, 2002)

Dawson, Gowan, Richard Noakes, and Jonathan R. Topham, 'Introduction' in *Science and the Nineteenth Century Periodical: Reading the Magazine of Nature*, ed. by Geoffrey Cantor and others, (Cambridge: Cambridge University Press, 2004)

De Vries, Jan, 'The Industrial Revolution and the Industrious Revolution', *Journal of Economic History*, 54 (1994) 249-270

Dick, Malcolm, *Joseph Priestley and Birmingham* (Birmingham: Brewin Books, 2005),

Digby, Anne, *Making a medical living: doctors and patients in the English market for medicine, 1720-1911* (Cambridge: Cambridge University Press, 1994)

Dingwall, Helen M., 'To Be Insert in the *Mercury*': Medical Practitioners and the Press in Eighteenth-Century Edinburgh', *Social History of Medicine*, 13:1 (2000), 23-44

Dodd, Edward Ernest, *A History of the Bingley Grammar School 1529 – 1929* (Bradford: Percy Lund, Humphries and Co, [1930])

Doig, Kathleen Hardesty, *From Encyclopédie to Encyclopédie Méthodique: Revision and Expansion* (Oxford: Voltaire Foundation, 2013)

The Early Years of the Edinburgh Medical School, ed. by R.G.W. Anderson and A.D.C. Simpson (Edinburgh: Royal Scottish Museum, 1976)

Eisenstein, Elizabeth L., *The Printing Press as an Agent of Change: Communications and Cultural Transformations* (Cambridge : Cambridge University Press, 1979)

Eliot, Simon, *Some Patterns and Trends in British Publishing, 1800-1900* (London: Bibliographical Society, 1994)

Elliott, Paul A., 'The Birth of Public Science in the English Provinces: Natural Philosophy in Derby, c. 1690-1760' *Annals of Science*, 57:1 (2000), 61-100

— 'The Origins of the 'Creative Class': Provincial Urban Society, Scientific Culture and Socio-Political Marginality in Britain in the Eighteenth and Nineteenth Centuries', *Social History*, 28:3 (2003), 361-387

— *Enlightenment, Modernity and Science: Geographies of Scientific Culture and Improvement in Georgian England* (London: I.B. Tauris, 2010)

Ellis, Joyce, 'Industrial and Urban Growth in Nottingham, 1680-1840', in *Towns, Regions and Industries: Urban and Industrial Change in the Midlands, c.1700-1840*, ed. by Jon Stobart and Neil Raven (Manchester: Manchester University Press, 2005), pp. 147-160

Ellwood, M., 'Library Provision in a small market town, 1700-1929', *Library History*, 5:2, (January 1979), 48-54

Emerson, Roger L., 'The Organisation of Science and its Pursuit in Early Modern Europe', in *Companion to the History of Modern Science*, ed. by R.C. Olby and others, (London: Routledge, 1990), pp. 960-979

Emerson, Roger L. and Paul Wood, 'Science and Enlightenment in Glasgow, 1690-1802' in *Science and Medicine in the Scottish Enlightenment*, ed. by Charles W.J. Withers and Paul Wood, (East Linton: Tuckwell Press, 2002), pp. 79-142

Estabrook, Carl B., *Urbane and Rustic England: Cultural Ties and social spheres in the provinces 1660-1780* (Manchester: Manchester University Press, 1998).

Everett, Alan, 'Country, county and town: patterns of regional evolution in England', in *The Eighteenth-Century Town: A Reader in English Urban History, 1688-1820*, ed. by Peter Borsay (London: Longman Group, 1990), pp. 83-115

Farington, J., *The Farington Diary vol. one*, ed. J. Greig (London: Hutchinson & Co, 1923-1928)

Feather, John, 'The Book Trade and Libraries', in *The Cambridge History of Libraries in Britain and Ireland* ed. by Peter Hoare and others, (Cambridge: Cambridge University Press, 2006), II (2006), pp. 301-312

— *The Provincial Book Trade in Eighteenth-Century England* (Cambridge: Cambridge University Press, 1985)

Felsenstein, Frank, 'Some eighteenth-century English provincial book advertisements', *Library Review*, 44: 3 (1995), 32 – 43

Fergus, Jan, 'Eighteenth-Century Readers in Provincial England: The Customers of Samuel Clay's Circulating Library and Bookshop in Warwick, 1770-1772', *Papers of the Bibliographical Society of America*, 78 (1984), 155-213

— *Provincial Readers in Eighteenth-Century England* (Oxford: Oxford University Press, 2006)

— 'Provincial Servants' Reading in the Late Eighteenth Century', in *The Practice and Representation of Reading in England*, ed. by James Raven, Helen Small and Naomi Tadmor (Cambridge: Cambridge University Press, 1996), pp. 202-225

Fergus, J. and R. Portner, 'Provincial Bookselling in 18th-Century England - the Case of John Clay Reconsidered', *Studies in Bibliography*, 40 (1987), 147-63

Finkelstein, David, 'Periodicals, Encyclopaedias and Nineteenth-Century Literary Production', in *The Edinburgh History of Scottish Literature volume II: Enlightenment, Britain and Empire (1707-1918)*, ed. by Susan Manning et al, (Edinburgh: Edinburgh University Press, 2007), pp. 198-210

Fissell, Mary, 'The Marketplace of Print', in *Medicine and the Market in England and Its Colonies, C.1450-C.1850*, ed. by Mark Jenner and Patrick Wallis (Basingstoke: Palgrave Macmillan, 2007), pp. 108-32

— *Patients, Power and the Poor in Eighteenth-Century Bristol* (Cambridge: Cambridge University Press, 1991)

Fissell, Mary, and Roger Cooter, 'Exploring Natural Knowledge: Science and the Popular', in *Eighteenth-Century Science*, ed. by Roy Porter (Cambridge: Cambridge University Press, 2003), pp. 129-158

Flavell, M. Kay, 'The Enlightened Reader and the New Industrial Towns: A Study of the Liverpool Library, 1758-90' *British Journal for Eighteenth Century Studies* VIII, (1985), 17-20

Flint, Kate, 'Reading Practices', in *The Book History Reader*, ed. by David Finkelstein and Alistair McCleery, 2nd edn (Abingdon: Routledge, 2006), pp. 416-423

Florence, Ann and Mair Pierce Moulton 'The formation of the Liverpool Medical Institution: Dispersal of Medical Knowledge and the Development of the Library', *Medical Historian* 14 (2002-2003), 34-45

Forgan, Sophie, 'Context, Image and Function: a Preliminary Enquiry into the Architecture of Scientific Societies', *British Journal for the History of Science* 19:1 (March 1986), 89-113

Forster, Geoffrey, 'Introduction', in *'A Very Good Public Library': Early Years of the Leeds Library*, ed. by Geoffrey Forster (Wylam: Allenholme Press, 2001), pp. 5-27

Forster, G.C.F., 'The Foundations: From the Earliest Times to c.1700' in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 2-23

Fraser, Derek, 'Politics and Society in the Nineteenth Century', in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 270-300

Furdell, Elizabeth Lane, *Publishing and Medicine in Early Modern England* (Rochester, New York: University of Rochester Press, 2002)

Fyfe, Aileen, 'Reading Children's Books in Late Eighteenth-Century Dissenting Families', *The Historical Journal*, 43:2 (June 2000), 453-473

Garner, A.D., and E.W. Jenkins, 'The English Mechanics' Institutes: The Case of Leeds, 1824-1842', *History of Education* 13 (1984), 139-151

Garrison, Fielding H., 'The Medical and Scientific Periodicals of the Seventeenth and Eighteenth Centuries', *Bulletin of the History of Medicine* 2 (1934:b), 285-343

Garside, Peter, 'Politics and the Novel 1780-1830', in *The Romantic Period* ed. by David B. Pirie (London: Penguin Books Ltd, 1994), 49-86

Gauldie, Enid, 'Mechanical Aids to Linen Bleaching in Scotland', *Textile History*, 1:2, (December 1969), 129-157

Gelfand, Toby, 'Invite the Philosopher, as well as the charitable': Hospital Teaching as Private Enterprise in Hunterian London', in *William Hunter and the Eighteenth-Century Medical World* ed. by W.F. Bynum and Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 129-152

Gibb, Mildred Ann and Frank Beckwith, *The Yorkshire Post : Two Centuries* (Leeds: Yorkshire Conservative Newspaper Co., 1954)

Golinski, J., 'Science in the Enlightenment', *History of Science*, 24 (1986), 411-424

— Science as Public Culture: Chemistry and Enlightenment in Britain 1760-1820 (Cambridge: Cambridge University Press, 1992)

Grady, Kevin, 'Commercial, Marketing and Retailing Amenities, 1700-1914', in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 177-199

— *The Georgian Public Buildings of Leeds and the West Riding* (Leeds: Thoresby Society, 1989)

Green, Edward, 'Local Libraries and their origin and progress' in *Halifax Guardian Almanack* (1911), pp. 75-93

Green, James, 'Subscription Libraries and Commercial Circulating Libraries in Colonial Philadelphia and New York', in *Institutions of Reading: The Social Life of Libraries in the United States*, ed. by Thomas Augst and Kenneth E. Carpenter, (Amherst: University of Massachusetts Press, 2007), pp. 53-71

Grenby, Matthew, *The Anti-Jacobin Novel: British Conservatism and the French Revolution* (Cambridge: Cambridge University Press, 2004)

Grundy, Isobel, 'Women and print: readers, writers and the market', in *The Cambridge History of the Book in Britain volume five* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), pp.146-160

Habermas, Jürgen, *The Structural Transformation of the Public Sphere: an Inquiry into a Category of Bourgeois Society*, trans. by Thomas Burger (Cambridge: Polity Press, 1989)

Hague, William, *William Wilberforce: The Life of the Great Anti-Slave Trade Campaigner* (San Diego: Harcourt, 2007)

Hall, A. Rupert, 'What did the Industrial Revolution in Britain owe to Science?' in *Historical Perspectives: Studies in English Thought and Society, in Honour of J.H. Plumb*, ed. by Neil McKendrick (London: Europa, 1974), pp. 129-151

— *The Scientific Revolution, 1500-1800* (London: Longmans, Green and co, 1954)

Hall, Trevor H., *The Leeds Library: A Selective Check-List of Publications Relating to its History from 1768 to 1977* (Leeds: The Leeds Library, 1983)

Hamilton, Alice, 'The Leeds Foreign Circulating-Library c 1779-1814', in 'A Very Good Public Library': *Early Years of the Leeds Library*, ed. by Geoffrey Forster (Wylam : Allenholme Press, 2001), pp. 111-171

Hamlyn, Hilda M., 'Eighteenth-Century Circulating Libraries in England' *The Library*, 5 (1946), 197-222

Hapgood, Kathleen, 'Library practice in the Bristol Library Society, 1772-1830' *Library History* 5 (1981), 145-53

Harbottle, Stephen, *The Reverend William Turner: Dissent and Reform in Georgian Newcastle upon Tyne* (Newcastle: Literary and Philosophical Society of Newcastle upon Tyne, 1997)

Hargrave, Emily, 'The Early Leeds Volunteers', *Publications of the Thoresby Society*, XXVIII (1928), 255-313

Harris, Michael, 'Periodicals and the Book Trade', in *Development of the English Book Trade, 1700-1899*, ed. by Robin Myers and Michael Harris (Oxford: Oxford Polytechnic Press, 1981), pp. 66-94

Harrison, F.C., *Learning and Living, 1790-1960: A Study in the History of the English Adult Education Movement* (London: Routledge and Paul, 1961)

Hartley, W.C.E., *Banking in Yorkshire* (Clapham: Dalesman, 1975)

Hays, J.N., 'The London Lecturing Empire, 1800-50', in *Metropolis and Province: Science in British Culture, 1780-1850*, ed. by Ian Inkster and Jack Morrell, (London: Hutchinson, 1983), pp. 91-119

Heaton, Herbert, 'Benjamin Gott and the Anglo-American cloth trade', *Journal of Economic and Business History* II (1929), 146-162

— 'Benjamin Gott and the Industrial Revolution in Yorkshire', *Economic History Review*, 3:1, (January 1931), 45-66

— 'Yorkshire Cloth Traders in the United States 1770-1840', *Publications of the Thoresby Society* XXXVII:3 (1941), 225-287

— *The Yorkshire Woollen and Worsted Industries: from the earliest times up to the Industrial Revolution* (Oxford: Clarendon Press, 1920)

Hempton, David, 'Enlightenment and Faith' in *The Eighteenth Century 1688-1815*, ed. by Paul Langford (Oxford: Oxford University Press, 2002), pp. 71-100

A Historical Sketch of the General Infirmary at Leeds, 1767-1916 (Leeds: Richard Jackson, 1917)

Hobbs, William, *The Earth Generated and Anatomized*, ed. by Roy Porter, (London: British Museum (Natural History), 1981)

Hobsbawm, E.J. *The Age of Revolution Europe 1789-1848* (Weidenfeld and Nicholson, 1962; repr. London: Abacus, 1996)

Holt, Anne, *A Life of Joseph Priestley* (London: Oxford University Press, 1931)

Hudson, Pat, *The Industrial Revolution* (London: Edward Arnold, 1992)

Immel, Andrea, 'Children's Books and School-Books', in *The Cambridge History of the Book in Britain, Volume V 1695-1830* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), pp. 736-749

Inkster, Ian, 'Culture, Institutions and Urbanity: The Itinerant Science Lecturer in Sheffield 1790-1850', in *Essays in the Economic History of South Yorkshire*, ed. by S. Pollard and C. Holmes (Sheffield, 1976), pp. 218-232

— 'The Development of a Scientific Community in Sheffield, 1790-1850: A Network of People and Interests', *Transactions of the Hunter Archaeological Society* 10 (1973), 99-131

— 'Introduction: Aspects of the History of Science and Science Culture in Britain, 1780-1850 and Beyond', in *Metropolis and Province: Science in British Culture, 1780-1850*, ed. by Ian Inkster and Jack Morrell, (London: Hutchinson, 1983), pp. 11-54

— 'Marginal Men: Aspects of the Social role of the Medical Community in Sheffield 1790-1850', in *Health Care and Popular Medicine in Nineteenth Century England: Essays in the Social History of Medicine*, ed. by David Richards and John Woodward, (London: Croom Helm, 1977), pp. 128-163

— 'The Public Lectures as an Instrument of Science Education for Adults – the Case of Great Britain, c. 1750-1850', *Paedagogica Historica* 20 (1980), 80-107

— 'Science and the Mechanics' Institutes, 1820-1850: The Case of Sheffield', *Annals of Science* 32 (1975), 451-474

— 'Scientific Culture and Scientific Education in Liverpool prior to 1812 – A Case Study in the Social History of Education' in *Scientific and Technical Education in Early Industrial Britain*, ed. by M.D. Stephenson and G.W. Roderick, (Nottingham, 1981), pp. 291-330

Innes, Joanna, 'Governing Diverse Societies' in *The Eighteenth Century 1688-1815*, ed. by Paul Langford (Oxford: Oxford University Press, 2002), pp. 103-139

— 'Libraries in context: social, cultural and intellectual background', *The Cambridge History of Libraries in Britain and Ireland* ed. by Peter Hoare and others, (Cambridge: Cambridge University Press, 2006), II (2006), pp. 285-300

Innes, Joanna and Nicholas Rogers, 'Politics and Government 1700-1840', in *The Cambridge Urban History of Britain* ed. by Peter Clark, Martin Daunton and D.M. Palliser, 3 Vols(Cambridge: Cambridge University Press, 2000), II (2000), pp. 529-574

Issac, Peter, 'Pills and Print', in *Medicine, Mortality and the Book Trade*, ed. by Robin Myers and Michael Harris, (New Castle, DE: Oak Knoll Press; Folkstone, Kent: St. Paul's Bibliographies, 1998), pp. 25-47

Iser, Wolfgang, 'Interaction between Text and Reader', in *The Book History Reader*, ed. by David Finkelstein and Alistair McCleery, 2nd edn (Abingdon: Routledge, 2006), pp. 391-396

Jacob, Margaret C., *The Cultural Meaning of the Scientific Revolution* (New York : Knopf, 1988)

— *The First Knowledge Economy: Human Capital and the European Economy, 1750-1850* (Cambridge: Cambridge University Press, 2013)

— 'Mechanical Science on the Factory Floor: The Early Industrial Revolution in Leeds', *History of Science* 45:2, (2007), 197-221

— *Scientific Culture and the Making of the Industrial West* (Oxford: Oxford University Press, 1997)

Jacob, Margaret C., and David Reid, 'Technical Knowledge and the Mental Universe of Manchester's Early Cotton Manufacturers', *Canadian Journal of History* XXXVI (2001), 283-304

Jacob, Margaret C., and Larry Stewart, *Practical Matter: Newton's Science in the Service of Industry and Empire, 1687-1851* (Cambridge, Mass; London: Harvard University Press, 2004)

Jacobs, Edward H., 'Eighteenth-Century British Circulating Libraries and Cultural Book History', *Book History*, 6 (2003), 1-22

Jenkinson, Jacqueline, 'The Role of Medical Societies in the Rise of the Scottish Medical Profession 1730-1939', *Social History of Medicine* 4:2 (1991), 253-275

Jenner, Mark S.R., 'Body, Image, Text in Early Modern Europe', *Social History of Medicine*, 12:1 (1999), 143-154

— 'Environment, Health and Population', in *The Healing Arts: Health, Disease and Society in Europe 1500-1800* ed. by Peter Elmer (Manchester: Manchester University Press, 2004), pp. 284-314

Johns, Adrian, *The Nature of the Books: Print and Knowledge in the Making* (Chicago: University of Chicago Press, 1998)

Jones, E.L., and M.E. Falkus, 'Urban Improvement and the English economy in the seventeenth and eighteenth centuries', in *The Eighteenth-Century Town: A Reader in English Urban History, 1688-1820*, ed. by Peter Borsay (London: Longman Group, 1990), pp. 116-158

Jones, Peter M., *Industrial Enlightenment: Science, Technology and Culture in Birmingham and the West Midlands, 1760-1820* (Manchester: Manchester University Press, 2008)

Jordanova, Ludmilla, 'The Social Construction of Medical Knowledge', *Social History of Medicine*, 8:3, (1995), 361-381

Joyes, Sara E., 'The Sheffield Library 1771-1907', *Library History*, 2 (1971), 91-116

Kaufman, Paul, *Borrowings from the Bristol Library, 1773-1784: A Unique Record of Reading Vogues* (Charlottesville: Bibliographical Society of the University of Virginia, 1960)

— 'The Community Library: A Chapter in English Social History', *Transactions of the American Philosophical Society*, 57 (1967), 1-67

— *Libraries and their Users: Collected Papers in Library History* (London: Library Association, 1969)

Keel, Othmar, 'The Politics of Health and the Institutionalisation of Clinical Practices in Europe in the Second Half of the Eighteenth Century', in *William Hunter and the Eighteenth-Century Medical World* ed. by W.F. Bynum and Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 207-258

Kelly, Thomas, *Early Public Libraries: A History of Public Libraries in Great Britain before 1850* (London: Library Association, 1966)

Kett, J. F., 'Provincial Medical Practice in England 1730-1815', *Journal of the History of Medicine and Allied Sciences*, 19 (1964), 17-29

Kidson, Frank, *British Music Publishers, Printers and Engravers London, Provincial, Scottish and Irish: from Queen Elizabeth's reign to George the Fourth's: with select bibliographical lists of musical works printed and published within that period* (London: W.E. Hill, [1900])

Kirby, Joan W., 'Restoration Leeds and the Aldermen of the Corporation, 1661-1700' *Northern History*, 22, (1986), 123-174

Kitteringham, G., 'Science in provincial society: the case of Liverpool' *Annals of Science* 39:4 (1982), 329-348

Klein, Lawrence E., 'Politeness and the Interpretation of the British Eighteenth Century', *Historical Journal*, 45:4 (December 2002), 869-898

Knott, Joan, 'Circulating Libraries in Newcastle in the Eighteenth and Nineteenth Centuries', *Library History*, 2 (1970), 227-49

Koditschek, Theodore, *Class Formation and Urban Industrial Society: Bradford, 1750-1850* (Cambridge: Cambridge University Press, 1990)

Kronick, David A., *A history of scientific and technical periodicals : the origins and development of the scientific and technological press, 1665-1790* (New York: Scarecrow Press, 1962 [c1961])

Lane, Joan, 'The Doctor Scolds Me': The Diaries and Correspondence of Patients in Eighteenth Century England', in *Patients and Practitioners: Lay Perceptions of Medicine in Pre-Industrial Society*, ed. by Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 205-248

— 'The Medical Practitioners of Provincial England in 1783', *Medical History*, 28 (1984), 353-371

— 'The Provincial Practitioner and his Services to the Poor, 1750-1800', *Society for the History of Medicine Bulletin* 28 (1981), 10-14

— 'The Role of Apprenticeship in Eighteenth-Century Medical Education in England', in *William Hunter and the Eighteenth-Century Medical World* ed. by W.F. Bynum and Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 57-104

Langford, Paul, 'Introduction: Time and Space' in *The Eighteenth Century 1688-1815*, ed. by Paul Langford (Oxford: Oxford University Press, 2002), pp.1-32

— *A Polite and Commercial People: England 1727-1783* (Oxford: Clarendon Press, 1989)

— *Public Life and the Propertied Englishman, 1689-1798* (Oxford: Clarendon Press, 1991)

Lawrence, Christopher, 'Ornate Physicians and Learned Artisans: Edinburgh Medical Men, 1726-1776', in *William Hunter and the Eighteenth-Century Medical World* ed. by W.F. Bynum and Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 153-176

Lawrence, Susan. C., 'Anatomy and Address: Creating Medical Gentlemen in Eighteenth-Century London', in *The History of Medical Education in Britain*, ed. by Vivian Nutton and Roy Porter, (Amsterdam: Rodopi, 1995), pp. 199-228

— *Charitable Knowledge: Hospital Pupils and Practitioners in Eighteenth-Century London* (Cambridge: Cambridge University Press, 1996),

Leeds and its History: three hundred years of achievement, (Leeds, *Yorkshire Post*, 8 July 1926)

Leeds Describ'd: Eyewitness Accounts of Leeds, 1534-1905 ed. by Peter Brears and Ann Heap (Derby: Breedon, 1993)

LeFanu, W.R., *British Periodicals: A Chronological List* (Baltimore: The John Hopkins University Press, 1938)

Linch, Kevin, 'A Geography of Loyalism? The Local Military Forces of the West Riding of Yorkshire, 1794–1814' *War & Society*, 19:1, (2001), 1–21

Looney, John Jefferson, *Advertising and Society in England, 1720-1820: a Statistical Analysis of Yorkshire Newspaper Advertisements* (Ann Arbor: University Microfilms International, 1984)

— 'Cultural life in the provinces: Leeds and York, 1720-1820' in *The First Modern Society: Essays in English History in Honour of Lawrence Stone*, ed. by A.L. Beier, David Cannadine and James M. Rosenheim (Cambridge: Cambridge University Press, 2005), pp. 483-510

Loudon, Irvine, *Medical Care and the General Practitioner 1750-1850* (Oxford: Oxford University Press, 1987)

— 'Medical Education and Medical Reform', in *The History of Medical Education in Britain*, ed. by Vivian Nutton and Roy Porter, (Amsterdam: Rodopi, 1995), pp. 229-249

— ‘The Nature of Provincial Medical Practice in Eighteenth-Century England’, *Medical History*, 29 (1985), 1-32

Loudon, Jean and Irvine Loudon, ‘Medicine, Politics and the Medical Periodical 1800-50’ in *Medical Journals and Medical Knowledge: Historical Essays*, ed. by W.F. Bynum, Stephen Lock and Roy Porter, (London: Routledge, 1992), pp. 49-69

Lovell, Veronica M.E., ‘Benjamin Gott of Armley House, Leeds 1762 - 1840: Patron of the arts’, *Thoresby Society*, LIX, 32, (1984), 177-221

Lumb, G.D., ‘Extracts from the Minute Book of the Committee of Charitable Uses, Leeds’, *Publications of the Thoresby Society*, XXII (1915), 355-386

Lupton, C.A., *The Lupton Family in Leeds* (Ripon: Harrison, 1965)

Lyons, Martyn, *A History of Reading and Writing In the Western World* (Basingstoke: Palgrave MacMillan, 2010)

MacDonald, Fiona, ‘Reading Cleghorn the Clinician: The Clinical Case Records of Dr. Robert Cleghorn, 1785-1818’ in *Science and Medicine in the Scottish Enlightenment*, ed. by Charles W.J. Withers and Paul Wood, (East Linton: Tuckwell Press, 2002), pp. 255-279

Mackillop, A.D., ‘English Circulating Libraries 1725-50’ *Library*, s4-XIV (4), (1934), 477-485

Maidment, Brian, ‘“Periodicals and serial publications’ 1780-1830’, in *The Cambridge History of the Book in Britain volume five* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), pp. 498-512

Mandelbrote, Giles, ‘Personal Owners of Books’, in *The Cambridge History of Libraries in Britain and Ireland* ed. by Peter Hoare and others, (Cambridge: Cambridge University Press, 2006), II (2006), pp. 173-189

Mandelbrote, Scott, ‘Professional Collections: Libraries for Scientists and Doctors’, in *The Cambridge History of Libraries in Britain and Ireland* ed. by Peter Hoare and others, (Cambridge: Cambridge University Press, 2006), II (2006), pp. 158-172

Manley, Keith, *Books, Borrowers, and Shareholders: Scottish Circulating and Subscription Libraries Before 1825 - a Survey and Listing* (Edinburgh: Edinburgh Bibliographical Society, 2012).

— ‘Lounging places and frivolous literature: subscription and circulating libraries in the west Country to 1825’ in *Printing Places: Locations of Book Production and Distribution since 1500* ed. by John Hinks (Newcastle, Delaware: Oak Knoll, 2005), pp. 107-120

Marland, Hilary, *Medicine and Society in Wakefield and Huddersfield 1780-1870* (Cambridge: Cambridge University Press, 1987)

Mathias, Peter, ‘Who Unbound Prometheus? Science and Technical Change, 1600-1800’ in *Science and Society, 1600-1900*, ed. by Peter Mathias (Cambridge: Cambridge University Press, 1972), pp. 33-53

Maw, Peter, ‘Yorkshire and Lancashire ascendant: England’s textile exports to Philadelphia and New York, 1750-1805’, *The Economic History Review*, 63:3 (2010), 734-68.

Mazumdar, Pauline M.H., ‘Anatomy, Physiology and Surgery: Physiology Teaching in Early Nineteenth-Century London’, *Bulletin canadien d'histoire de la médecine/Canadian Bulletin of Medical History*, 4, (1987), 119-143

McCormmach, Russell, *Weighing the World: The Reverend John Michell of Thornhill* (Netherlands: Springer, 2012)

McDougall, Warren, ‘Charles Elliot’s Medical Publications and the International Book Trade’, in *Science and Medicine in the Scottish Enlightenment*, ed. by Charles W.J. Withers and Paul Wood, (East Linton: Tuckwell Press, 2002), pp. 215-254

McLachlan, Henry, *Warrington Academy: Its History and Influence* (Manchester: Chetham Society, 1943)

McKendrick, Neil, ‘Part I: Commercialization and the Economy’, in *The Birth of a Consumer Society: The Commercialization of Eighteenth-Century England*, ed. by Neil McKendrick, John Brewer and J.H. Plumb (London: Hutchinson, 1993), pp. 9-196

McKillop, A.D., ‘English Circulating Libraries, 1725-1750’, *The Library*, 14 (1934), 477-485

McKitterick, David, ‘Wantonness and Use: Ambitions for Research Libraries in Early Eighteenth-Century England’, in *Enlightening the British: Knowledge, Discovery and the Museum in the Eighteenth Century*, ed. by R.G.W. Anderson and others, (London: British Museum Press, 2003)

Miller, David, ‘The Usefulness of Natural Philosophy: The Royal Society and the Culture of Practical Utility in the later eighteenth century’, *British Journal for the History of Science*, 32:2 (June 1999), 185-201

Mitchell, W.R., *A History of Leeds* (Chichester: Phillimore, 2000)

Mokyr, Joel, *The Enlightened Economy: An Economic History of Britain, 1700-1850* (New Haven, Conn.; London: Yale University Press, 2009)

— *The Gifts of Athena: Historical Origins of the Knowledge Economy* (Princeton, NJ; Oxford: Princeton University Press, 2002)

— 'The Intellectual Origins of Modern Economic Growth', *The Journal of Economic History*, 65:2 (2005), 285-351

Money, John, 'Birmingham and the West Midlands 1760-1793: Politics and Regional Identity in the English Provinces in the later Eighteenth Century', in *The Eighteenth-Century Town: A Reader in English Urban History, 1688-1820*, ed. by Peter Borsay (London: Longman Group, 1990), pp. 292-314

— *Experience and Identity: Birmingham and the West Midlands, 1760-1800* (Manchester: Manchester University Press, 1977)

— "Science, Technology and Dissent in English Provincial Culture': From Newtonian Transformation to Agnostic Incarnation', in *Science and Dissent in England 1688-1945*, ed. by Paul Wood, (Burlington, VT: Ashgate, 2004), pp. 67-111

Morgan, C.J., 'Demographic Change, 1771-1911', in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 48-71

Morgan, Simon, *A Victorian woman's place: public culture in the nineteenth century* (London: Tauris Academic Studies, 2007)

Morrell, J.B., 'Bourgeois Scientific Societies and Industrial Innovation in Britain, 1780-1850', *The Journal of European Economic History* 24:2 (1995), 311-332

— 'Professionalisation', in *Companion to the History of Modern Science*, ed. by R.C. Olby and others, (London: Routledge, 1990), pp. 980-989

— 'Wissenschaft in Worstedopolis: Public Science in Bradford, 1800-1850', *British Journal for the History of Science* 18:1 (March 1985), 1-23

Morris, Richard, *Class, Sect and Party: the Making of the British Middle Class, Leeds 1820-1850* (Manchester: Manchester Unity Press, 1990)

— *Men, Women and Property in England 1780-1870: A Social and Economic History of Family Strategies Amongst the Leeds Middle Classes* (Cambridge: Cambridge University Press, 2004)

— 'Middle-Class Culture 1700-1914', in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 200-222

— 'Voluntary Societies and British Urban Élites 1780-1850: An Analysis', in *The Eighteenth-Century Town: A Reader in English Urban History, 1688-1820*, ed. by Peter Borsay (London: Longman Group, 1990), pp. 338-366

Morrish, P.S., 'Foreign-language books in some Yorkshire Subscription Libraries, 1785-1805', *Yorkshire Archaeological Journal* 53 (1981), 79-92

Mussell, James, '"This is Ours and For Us": The Mechanic's Magazine and low scientific culture in Regency London', in *Repositioning Victorian Sciences: Shifting Centres in Nineteenth-Century Scientific Thinking*, ed. by David Clifford and others (London: Anthem Press 2006), pp. 107-118.

— *Science, Time and Space in the Late Nineteenth-Century Periodical Press: Movable Types* (Aldershot: Ashgate 2007).

Musson, A.E., 'Editor's Introduction', in *Science, Technology and Economic Growth in the Eighteenth-Century*, ed. by A.E. Musson, (London: Methuen, 1972), pp. 1-68

Musson, A.E., and E. Robinson, 'Science and Industry in the Late Eighteenth Century', *The Economic History Review*, 13:2 (1960), 222-244

— *Science and Technology in the Industrial Revolution* (Manchester: Manchester University Press, 1969)

Navickas, Katrina, 'The 'Spirit of Loyalty': Material Culture, Space and the Construction of an English Loyalist Memory 1790-1840', in *Loyalism and the Formation of the British World 1775-1914*, ed. by Allan Blackstock and Frank O'Gorman (Woodbridge: The Boydell Press, 2014), pp. 43-60

Nelles, Paul A., 'Libraries, Books and Learning, from Bacon to the Enlightenment', in *The Cambridge History of Libraries in Britain and Ireland* ed. by Peter Hoare and others, (Cambridge: Cambridge University Press, 2006), II (2006), pp. 23-25

Newman, Charles, *The Evolution of Medical Education in the Nineteenth Century* (London; New York : Oxford University Press, 1957)

Norton, Jane E., *Guide to the National and Provincial Directories of England and Wales, Excluding London, Published before 1856* (London: Royal Historical Society, 1984)

O'Brien, Patrick, *Warrington Academy 1757-1786: Its Predecessors & Successors*, (Lancashire: Owl Books, 1989)

Orange, Derek, 'Rational Dissent and Provincial Science: William Turner and the Newcastle Literary and Philosophical Society', in *Metropolis and Province: Science in British Culture, 1780-1850*, ed. by Ian Inkster and Jack Morrell, (London: Hutchinson, 1983), pp. 205-230

Pacey, A.J., 'Emerging from the Museum: Joseph Dawson, Mineralogist, 1740-1813', *British Journal for the History of Science*, 36:4 (December 2003), 455-469

Parish, Charles, *History of the Birmingham Library* (London: Library Association, 1966)

Parker, Irene, *Dissenting Academies in England Their Rise and Progress and Their Place, Among the Educational Systems, of the Country*. (1914; repr. London: Forgotten Books, 2013), pp. 154-5.

Pemberton, H., 'Two hundred years of banking in Leeds', *Thoresby Society XLVI*, (1963), 54-86

Perrin, Carleton E., 'The Chemical Revolution', in *Companion to the History of Modern Science*, ed. by R.C. Olby and others, (London: Routledge, 1990), pp. 264-277

Pickstone, John V., *Medicine and Industrial Society: A History of Hospital Development in Manchester and its Region, 1752-1946* (Manchester: Manchester University Press, 1985)

Plumb, J.H., 'Part III: Commercialization and Society', in *The Birth of a Consumer Society: The Commercialization of Eighteenth-Century England*, ed. by Neil McKendrick, John Brewer and J.H. Plumb (London: Hutchinson, 1993), pp. 265-354

Pocock, J.G.A., *Virtue, Commerce and History* (Cambridge, Cambridge University Press, 1985)

Porter, Dorothy, and Roy Porter, *Patient's Progress: Doctors and Doctoring in Eighteenth-century England* (Oxford: Polity, 1989)

Porter, Roy, *Enlightenment: Britain and the Creation of the Modern World* (London: The Penguin Press, 2000)

— 'Gentlemen and Geology: The Emergence of a Scientific Career, 1660-1920', *Historical Journal* 21 (1978), 809-836

— 'The Gift Relation: Philanthropy and Provincial Hospitals in Eighteenth-Century England', in *The Hospital in History* ed. by L. Granshaw and Roy Porter, (London: Routledge, 1990), pp. 149-178

— 'Laymen, Doctors and Medical Knowledge in the Eighteenth Century: The Evidence of the *Gentleman's Magazine*', in *Patients and Practitioners: Lay Perceptions of Medicine in Pre-Industrial Society*, ed. by Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 282-314

— 'The Rise of Medical Journalism in Britain to 1800', in *Medical Journals and Medical Knowledge: Historical Essays*, ed. by W.F. Bynum, Stephen Lock and Roy Porter, (London: Routledge, 1992), pp. 6-28

— 'Science, Provincial Culture and Public Opinion in Enlightenment England', in *The Eighteenth-Century Town: A Reader in English Urban History, 1688-1820*, ed. by Peter Borsay (London: Longman Group, 1990), pp. 243-267

— 'William Hunter: A Surgeon and A Gentleman' in *William Hunter and the Eighteenth-Century Medical World* ed. by W.F. Bynum and Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 7-34

Poynter, F.N.L., *The Evolution of Medical Practice in Britain* (London: Pitman, [1961])

Prest, Wilfred, 'Law Books', in *The Cambridge History of the Book in Britain, Volume V 1695-1830* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), pp. 791-806

Price, A.C., *A History of the Leeds Grammar School from its foundation to the end of 1918* (Leeds, Jackson, 1919)

Price, John Vladimir, 'Philosophical Books', in *The Cambridge History of the Book in Britain, Volume V 1695-1830* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), pp. 807-817

Pullan, Margaret, *The Monuments of the Parish Church of St. Peter-at-Leeds* (Leeds: Maney Publishing, 2007)

Purdue, A.W., *Merchants and gentry in north-east England, 1650-1830 : the Carrs and the Ellisons* (Sunderland: University of Sunderland Press, 1999)

Rail, Tony and Beryl Thomas, 'Joseph Priestley's Journal while at Daventry Academy, 1754', *Enlightenment and Dissent* 13 (1994), 49-113

Raven, James, *The Business of Books: Booksellers and the English Book Trade, 1450-1850* (New Haven: Yale University Press, 2007)

— *Judging New Wealth: Popular publishing and responses to Commerce in England 1750-1800* (Oxford: Clarendon Press, 1992)

— 'Libraries for Sociability: The Advance of the Subscription Library', in *The Cambridge History of Libraries in Britain and Ireland* ed. by Peter Hoare and others, (Cambridge: Cambridge University Press, 2006), II (2006), pp. 241-263

— *London Booksellers and American Customers: Transatlantic Literary Community and the Charleston Library Society, 1748-1811* (Columbia: University of South Carolina Press, 2002)

— 'From Promotion to Proscription: Arrangements for Reading and Eighteenth-Century Libraries', in *The Practice and Representation of Reading in England*, ed. by James Raven, Helen Small and Naomi Tadmor (Cambridge: Cambridge University Press, 1996), pp. 175-201

— 'Social Libraries and Library Societies in Eighteenth-Century North America' in *Institutions of Reading: The Social Life of Libraries in the United States*, ed. by Thomas Augst and Kenneth E. Carpenter, (Amherst: University of Massachusetts Press, 2007), pp. 24-52

Raven, James, Helen Small and Naomi Tadmor, 'Introduction: The Practice and Representation of Reading in England', in *The Practice and Representation of Reading in England*, ed. by James Raven, Helen Small and Naomi Tadmor (Cambridge: Cambridge University Press, 1996), pp. 1-21

Read, Donald, *Press and People, 1790-1850 : Opinion in Three English Cities* (London: Edward Arnold, 1961)

Reed, Michael, 'The Transformation of Urban Space 1700-1840', in *The Cambridge Urban History of Britain* ed. by Peter Clark, Martin Daunton and D.M. Palliser, 3 Vols (Cambridge: Cambridge University Press, 2000), II (2000), pp. 615-640

Richardson, Ruth, *Death, Dissection and the Destitute* (London: Routledge & Kegan Paul, 1987)

Rimmer, Gordon, 'The Industrial Profile of Leeds 1740-1780', *Thoresby Society* (1967) 130-157

— *Marshalls of Leeds: Flax-Spinners, 1788-1886* (Cambridge: Cambridge University Press, 1960)

— 'Middleton Colliery near Leeds (1770-1830)' *Yorkshire Bulletin of Economic and Social Research*, 7 (1955), 41-57

— 'William Hey of Leeds: Surgeon (1736-1819), a reappraisal', *Proceedings of the Leeds Philosophical and Literary Society, Literary and Historical Section* 9:7 (Leeds: Leeds Philosophical and Literary Society, 1961)

Roberts, Daphne and Bob Duckett, 'The Bradford Library and Literary Society, 1774–1980', *Library and Information History*, 22:3 (November 2006), 213-226

Robinson, Elaine, 'The Leeds Library in 1817', in *'A Very Good Public Library': Early Years of the Leeds Library*, ed. by Geoffrey Forster (Wylam: Allenholme Press, 2001), pp. 29-109

Robinson, 'The Derby Philosophical Society', *Annals of Science*, 9:4, (1953), 359-367

Robinson, F. J. G., and P. J. Wallis *Book Subscription Lists: A Revised Guide* (Newcastle upon Tyne: H. Hill, 1975)

Robinson, Percy, *Leeds Old and New: a picturesque sketch of the city from the earliest times to the present day* (Leeds: Jackson, 1926)

Robson, Robert, *The Attorney in Eighteenth-Century England* (Cambridge: Cambridge University Press, 1959)

Rogers, Shef, 'Enlarging the Prospects of Happiness: Travel Reading and Travel Writing', in *The Cambridge History of the Book in Britain, Volume V 1695-1830* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), pp. 781-790

Rolleston, Humphry, 'Medical Friendships, Clubs and Societies,' *Annals of Medicine* 2 (1930), 249-266

Rook, Arthur, 'General Practice, 1793-1803: The Transactions of the Huntingdonshire Medical Society', *Medical History*, 4:3, (1960), 236-252

Rose, Jonathan, 'Rereading the English Common Reader: A Preface to a History of Audiences', in *The Book History Reader*, ed. by David Finkelstein and Alistair McCleery, 2nd edn (Abingdon: Routledge, 2006), pp. 424-439

Rosen, George, *A History of Public Health*, 2nd edn (Baltimore: John Hopkins University Press, 1993)

Rosenberg, Charles E., 'Medical Text and Social Context: Explaining William Buchan's *Domestic Medicine*' *Bulletin of the History of Medicine* 57:1 (1983), 22-42

Rosner, Lisa, *Medical Education in the Age of Improvement: Edinburgh Students and Apprentices 1760-1826* (Edinburgh: Edinburgh University Press, 1991),

Rouse, E.P., 'Old Halifax Circulating Library, 1768-1866', *Halifax Antiquarian Society Publications*, (1911) 45-59

Rousseau, G.S., 'Science Books and their Readers in the Eighteenth Century', in *Books and their Readers in Eighteenth Century England*, ed. by I. Rivers (Leicester: Leicester University Press, 1982), pp. 197-255

Schofield, Robert E., 'The Industrial Orientation of Science in the Lunar Society of Birmingham', *Isis*, 48 (1957), 408-15

— — *The Lunar Society of Birmingham: A Social History of Provincial Science and Industry in the Eighteenth-Century England* (Oxford: Clarendon Press, 1963)

— — *The Enlightened Joseph Priestley: a study of his life and work from 1773 to 1804* (University Park, Pa: Pennsylvania State University Press, c. 2004)

— — *The Enlightenment of Joseph Priestley: A Study of his Life and Work from 1733 to 1773* (University Park, Pa: Pennsylvania State University Press, 1997)

— — 'Priestley, Joseph (1733–1804)', in *Oxford Dictionary of National Biography*, <<http://0-www.oxforddnb.com>> [accessed 23 Nov 2013]

Scott, Ernest Kilburn, *Matthew Murray, pioneer engineer : records from 1765 to 1826* (Leeds: E. Jowett Ltd, 1928)

Scott, John, *A Historical Sketch of the Manchester Foreign Library 1830-1903* (Portico Library Offprint)

Scragg, Brenda J., *Portico 1806: The Founding Fathers* (Manchester: Portico Library, 2005)

Secord, James A., 'Knowledge in Transit', *Isis*, 95:4 (December 2004), 654-672

Shapin, Steven, 'Nibbling at the teats of Science': Edinburgh and the Diffusion of Science in the 1830s', in *Metropolis and Province: Science in British Culture, 1780-1850*, ed. by Ian Inkster and Jack Morrell, (London: Hutchinson, 1983), pp. 151-178

— — 'The Pottery Philosophical Society, 1819-1835: an Examination of the Cultural Uses of Provincial Science' *Social Studies of Science* 2 (October 1972)

— — 'Science and the Public', in *Companion to the History of Modern Science*, ed. by R.C. Olby and others, (London: Routledge, 1990), pp. 990-1007

Shaw, Batty A., 'The Oldest Medical Societies in Great Britain', *Medical History* 12:3, (1968), 232-244

Singleton, J., 'Extracts from an old Leeds Merchants' Memorandum Book 1770-86', *Publications of the Thoresby Society*, XXIV (1915), 36-7

Skempton, Alec, ed., *A Biographical Dictionary of Civil Engineers in Great Britain and Ireland: Vol. 1, 1500 – 1830* (London: Thomas Telford Publishing, 2002).

Smail, John, *The Origins of Middle-Class Culture: Halifax, Yorkshire, 1660-1780* (London: Cornell University Press, 1994)

— — *Merchants, Markets and Manufacture: the English Wool Textile Industry in the Eighteenth Century* (Basingstoke: Macmillan, 1999)

Smith, Ginnie, 'Prescribing the Rules of Health: Self-help and Advice in the late Eighteenth Century', in *Patients and Practitioners: Lay Perceptions of Medicine in Pre-Industrial Society*, ed. by Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 249-282

Squibbs, Richard, *Urban Enlightenment and the Eighteenth Century Periodical Essay: Transatlantic Retrospects* (Basingstoke: Palgrave Macmillan, 2014)

Stephens, W.B., 'Elementary Education and Literacy, 1770-1870' in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 223-249

Stewart, Larry, *The Rise of Public Science: Rhetoric, Technology and Natural Philosophy in Newtonian Britain, 1660-1750* (Cambridge: Cambridge University Press, 1992)

Stevenson, Lloyd G., 'A Note on the Relation of Military Service to Licensing in the History of British Surgery', *Bulletin of the History of Medicine* 27 (1953), 420-427

Stirling, A.M.W., *Annals of a Yorkshire House* (London: Bodley Head, 1911)

Stoker, David, 'Local library provision: I Norwich', in *The Cambridge History of Libraries in Britain and Ireland* ed. by Peter Hoare and others, (Cambridge: Cambridge University Press, 2006), II (2006), pp. 264-274

Stone, Lawrence and Jeanne Fawtier Stone, *An Open Elite? England 1540-1880* (Oxford: Clarendon Press, 1984)

Sturges, R.P., 'Context for Library History: Libraries in Eighteenth-Century Derby', *Library History*, 4 (1976), 44-52

— 'The Membership of the Derby Philosophical Society, 1783-1802', *Midland History*, 4:3 (1978), 212-229

Sunderland, Kathryn, "Events...Have made us a world of readers': Reader Relations 1780-1830', in *The Romantic Period* ed. By David B. Pirie (London: Penguin Books Ltd, 1994), pp. 1-48

— 'British Literature, 1774-1830' in *The Cambridge History of the Book in Britain, Volume V 1695-1830* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), pp. 687-683

Swaim, Elizabeth A. 'The auction as a means of book distribution in eighteenth-century Yorkshire', *Publishing History*, 1, (1977), 49-91

Symons, John, 'Scientific and Medical Libraries: the rise of the institution', in *The Cambridge History of Libraries in Britain and Ireland* ed. by Peter Hoare and others, (Cambridge: Cambridge University Press, 2006), II (2006), pp. 388-404

Tadmor, Naomi, "In the Even my Wife Read to me': Women, Reading and Household Life in the Eighteenth Century", in *The Practice and Representation of Reading in England*, ed. by James Raven, Helen Small and Naomi Tadmor (Cambridge: Cambridge University Press, 1996), pp. 162-174

Tann, Jennifer, 'The Bleaching of Woollen and Worsted Goods 1740-1860', *Textile History*, 1:2, (December 1969), pp. 158-169

Thackray, Arnold 'Natural Knowledge in Cultural Context: The Manchester Model', *American Historical Review*, 79, (1974), 672-709

- The History of Christianity* ed. by Tim Dowley and others, (Oxford: Lion Publishing, 1990)
- Thompson, C.J.S., 'The Evolution and Development of Surgical Instruments', *British Journal of Surgery*, XXVI, (January 1939), 457-461
- Thornton, David, 'Edward Baines, Senior (1774-1848): Provincial Journalism and Political Philosophy in Early-Nineteenth Century England', *Northern History* XL, (2003), 277-297
- — *Leeds the Story of a City* (Ayr: Fort, 2002)
- — *Mr Mercury : The Life of Edward Baines 1774-1848* (Chesterfield: Merton Priory Press, 2009)
- Thornton, John L., *Medical books, libraries and collectors : a study of bibliography and the book trade in relation to the medical sciences* (London: Deutsch, 1966)
- Thorpe, T.E., *Joseph Priestley* (London: J.M. Dent & co, 1906)
- Tierney, James, 'Periodicals and the trade, 1695-1780', in *The Cambridge History of the Book in Britain volume five* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), pp. 479-497
- Todd, William B., and Peter J. Wallis, 'Provincial Booksellers c. 1744: The *Harleian Miscellany* Subscription List', *The Library*, XXIX, (1974), 422-440
- Tomory, Leslie, *Progressive Enlightenment: The Origins of the Gaslight Industry, 1780-1820* (Cambridge, Mass.: MIT Press, 2012)
- Tompson, R.S., 'The Leeds Grammar School Case of 1805', *Journal of Educational Administration and History* 3:1 (1970) 1-6.
- Topham, Jonathan R., 'Anthologizing the Book of Nature: The Circulation of Knowledge and the Origins of the Scientific Journal in Late Georgian Britain', in *The Circulation of Knowledge Between Britain, India and China: The Early-Modern World to the Twentieth Century*, ed. by Bernard Lightman, Gordon McOuat, and Larry Stewart (Leiden and Boston: Brill, 2013), pp. 119-152
- — 'Introduction: BJHS special section: book history and the sciences', *BJHS* 33 (2000), 155-158
- — 'Publishing "Popular Science" in Early Nineteenth-Century Britain', in *Science in the Marketplace: Nineteenth Century Sites and Experiences*, ed. by Aileen Fyfe and Bernard Lightman (Chicago, London: Chicago University Press, 2007), pp. 135-168

— 'Science, Print and Crossing Borders: Importing French Science Books into Britain, 1789-1815', in *Geographies of Nineteenth Century Science*, ed. by David N. Livingstone and Charles Withers (Chicago: Chicago University Press, 2011), pp. 311-344

— 'Scientific Publishing and the Reading of Science in Nineteenth-Century Britain: A Historiographical Survey and Guide to Sources', *Studies In History and Philosophy of Science*, 31:4 (2000), 559-612

— 'Scientific and Medical Books 1780-1830', in *The Cambridge History of the Book in Britain, Volume V 1695-1830* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), pp. 827-833

— 'A View from the Industrial Age', *Isis*, 95 (2004), 431-442

Towsey, Mark R.M., 'First Steps in Associational Reading: The Foundation and Early Use of the Wigtown Subscription Library, 1790-1815', *Papers of the Bibliographical Society of America*, 103:4 (2009), 455-95

— "All Partners May be Enlightened and Improved by Reading Them': The Distribution of Enlightenment Books in Scottish Subscription Library Catalogues, 1750-c.1820', *Journal of Scottish Historical Studies*, 28:1 (2008), 20-43

— 'I can't resist sending you the book': Private Libraries, Elite Women, and Shared Reading Practices in Georgian Scotland. *LIH*, 29:3 (August 2013), 210-222.

— "The Talent hid in a Napkin": Castle Libraries in Scotland, 1770-1830' in *The History of Reading, Vol.2: Evidence from the British Isles, c.1750-1950* ed. by K. Halsey and WR Owens, (Basingstoke: Palgrave Macmillan, 2011), pp. 15-31.

— *Reading the Scottish Enlightenment: Books and their Readers in Provincial Scotland, 1750-1820* (Leiden: Brill, 2010)

Trinder, Barry, 'Towns and Industries: the Changing Character of Manufacturing Towns', in *Towns, Regions and Industries: Urban and Industrial Change in the Midlands, c.1700-1840*, ed. by Jon Stobart and Neil Raven (Manchester: Manchester University Press, 2005), pp. 102-118

Turner, J. Horsfall, *Halifax Books and Authors*, (Brighouse: printed for private circulation, 1906)

Unwin, R.W. 'Leeds becomes a transport centre' in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 113-141

Vickery, Amanda, *The Gentleman's Daughter: Women's Lives in Georgian England* (London: Yale University Press, 1998)

Vincent, David, *Literacy and Popular Culture: England 1750-1914* (Cambridge: Cambridge University Press, 1989)

Waddington-Feather, John, *Leeds The Heart of Yorkshire: a history and guide to the city and its surroundings* (Leeds, Basil Jackson Publications, 1967)

Waddington, Ivan, *The Medical Profession in the Industrial Revolution* (Dublin: Gill and MacMillan, 1984)

Wallis, Patrick, 'Consumption, Retailing, and Medicine in Early-Modern London', *Economic History Review*, 61 (2008), 26-53

Wallis, P.J., 'Book Subscription Lists' *The Library*, XXIX:3 (September 1974), 255-286

Wallis, P.J. and R.V. Wallis, *Eighteenth century medics: subscriptions, licences, apprenticeships* 2nd edn (Newcastle: Project for Historical Bibliography, 1988)

Walters, Alice, 'Conversation Pieces: Science and Politeness in Eighteenth-Century England', *History of Science* 35:2 (1997), 121-154

— 'Scientific and Medical Books, 1695-1780', in *The Cambridge History of the Book in Britain, Volume V 1695-1830* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), pp. 818-826

Walton, John K., 'North', in *The Cambridge Urban History of Britain* ed. by Peter Clark, Martin Daunton and D.M. Palliser, 3 Vols (Cambridge: Cambridge University Press, 2000), II (2000), pp. 111-132

Watts, Iain, "'We want no authors": William Nicholson and the Contested Role of the Scientific Journal in Britain, 1797-1813', *British Journal for the History of Science*, 47:3 (September 2014), 397-419

Watts, Ruth 'Joseph Priestley (1733-1804)' *Prospects: The Quarterly Review of Comparative Education*, XXIV 1:2, (1994), 343-353

Weindling, Paul, 'The British Mineralogical Society: A Case Study in Science and Social Improvement', in *Metropolis and Province: Science in British Culture, 1780-1850*, ed. by Ian Inkster and Jack Morrell, (London: Hutchinson, 1983), pp. 120-150

Willes, Margaret, *Reading Matters: Five Centuries of Discovering Books* (New Haven: Yale University Press, 2008)

Wiles, R. M., *Freshest Advices : Early Provincial Newspapers in England* (Columbus: Ohio State University Press, 1965)

Wilson, Adrian, 'Porter versus Foucault on the 'Birth of the Clinic'' in *Medicine, Madness and Social History: essays in honour of Roy Porter*, ed. by Roberta Bivins and John Pickstone, (London, Palgrave Macmillan 2007), pp. 25-35

— 'William Hunter and the Varieties of Man-Midwifery', in *William Hunter and the Eighteenth-Century Medical World* ed. by W.F. Bynum and Roy Porter (Cambridge: Cambridge University Press, 1985), pp. 343-370

Wilson, R.G., 'The Corporation of Leeds in the eighteenth century' *Publications of the Thoresby Society*, 16, (1979) 262- 271

— 'The Denises and the Milneses: Eighteenth-Century Merchant Landowners' in *Land and Industry* ed. by J.T. Ward and R.G. Wilson (Newton Abbott: printed by David and Charles, 1971), pp. 145-172

— 'The Fortunes of a Leeds Merchant House, 1780-1820' *Business History*, 9:1 (1967), 70-86

— *Gentlemen Merchants: The Merchant Community in Leeds, 1700-1830* (Manchester: Manchester University Press, 1971)

— 'Georgian Leeds', in *A History of Modern Leeds*, ed. by Derek Fraser (Manchester: Manchester University Press, 1980), pp. 24-43

— 'Merchants and Land: The Ibbetsons of Leeds and Denton, 1650-1850' *Northern History*, 24 (1988), 75-100

Wood, Marcus, 'Radical Publishing', in *The Cambridge History of the Book in Britain, Volume V 1695-1830* ed. by Michael F. Suarez, SJ and Michael L. Turner (Cambridge: Cambridge University Press, 2009), pp. 834-848

Woollen or worsted? : an Introduction to Wool Processing (Bradford: Bradford Art Galleries and Museums, 1983)

Wood, J.R., 'Leeds church patronage in the eighteenth century', *Publications of the Thoresby Society* (1948), 193-211

Wood, P.B., and J.V. Golinski, 'Library and Archive Resources in the History of Science and Medicine at the University of Leeds', *British Journal for the History of Science* 14:48 (1981), 263-281

Woodward, John, *To do the sick no harm: a study of the British voluntary hospital system to 1875* (London ; Boston : Routledge and Kegan Paul, 1974)

Wordsworth, Dorothy, *The Grasmere and Alfoxden Journals*, ed. by Pamela Woof (Oxford: Oxford University Press, 2002)

— *Letters of Dorothy Wordsworth: A New Selection*, ed. by Alan G. Hill (Oxford: Oxford University Press, 1981; repr. 1982)

Wykes, David L., 'Joseph Priestley, Minister and Teacher' in *Joseph Priestley, Scientist, Philosopher, and Theologian*, ed. by Isabel Rivers and David L. Wykes (Oxford: Oxford University Press, 2008), 20-48

Uglow, Jenny, *The Lunar Men: The Friends Who Made The Future, 1730-1810* (London: Faber and Faber, 2002)

Veneer, Leucha, 'Practical Geology and the Early Geological Society', in *The Making of the Geological Society of London* ed. by C.L.E. Lewis and S.J. Knell (London: Geological Society, 2009), pp. 243-253

Yates, Nigel, 'The Religious Life of Victorian Leeds' in *A History of Modern Leeds* ed. by D. Fraser, (Manchester: Manchester University Press, 1980) pp. 250-269

Yeo, Richard, *Encyclopaedic Visions: Scientific Dictionaries and Enlightenment Culture* (Cambridge: Cambridge University Press, 2001)

— 'Reading Encyclopaedias: Science and the Organisation of Knowledge in British Dictionaries of Arts and Sciences, 1730-1850', *Isis*, 82 (1991), 24-49

Zachs, William, *The First John Murray and the Late Eighteenth-Century London Book Trade* (Oxford:Oxford University Press, 1998)

Unpublished Theses and Papers

Atkins, Gareth, 'Wilberforce and his milieu: the worlds of Anglican Evangelicalism, c.1780-1830', (unpublished PhD thesis, University of Cambridge, 2009)

Bowd, Rebecca, 'Medics and Merchants: A comparative study of eighteenth-century subscription libraries in Leeds', (unpublished MA thesis, University of Leeds, 2009)

Carrick, Neville, 'Liverpool Library in the Eighteenth Century', (unpublished MA thesis, Liverpool University, 1995)

Chaplin, Simon, 'John Hunter and the 'museum oeconomy', 1750-1800', (unpublished PhD thesis, King's College London, 2009)

Crawford, Ronald, 'The gas industry in Leeds in the nineteenth century', (unpublished MPhil thesis, University of Leeds, 1986)

Daniels, Stephen John, 'Moral Order and the Industrial Environment in the Woollen Textile Districts of West Yorkshire, 1780-1880' (unpublished PhD thesis, University College London, 1980)

Day, Julie, 'Elite Woman's Household Management: Yorkshire 1680-1810' (unpublished PhD thesis, University of Leeds, 2007)

Demaine, Robert, 'Individual and Institution in the Musical Life of Leeds 1900-1914', (unpublished PhD thesis, University of York, 2000)

Denman, Derek, 'Materialising Cultural Value in the English Lakes, 1735-1845: A Study of the Responses of New Landowners to Representations of Place and People', (unpublished PhD thesis, University of Lancaster, 2011)

Fox, Mark D., 'The Reverend Sydney Smith and the culture of controversy in the early Nineteenth Century', (unpublished PhD thesis, University of Leeds, 2005)

Iwama, Toshihiko, 'The Middle Class in Halifax, 1780-1850', (unpublished PhD thesis, University of Leeds, 2003)

Lloyd, Josephine M., 'The casebooks of William Hey F.R.S. (1736-1819) : an analysis of a provincial surgical and midwifery practice', (unpublished PhD thesis, University of Leeds, 2005)

Longbottom, Betty, 'The Values and Limitations of Early Eighteenth Century Newspapers as a Source of Local History', (unpublished MA thesis,

Marland, Hilary, 'Medicine and society in Wakefield and Huddersfield, 1780-1870', (unpublished PhD thesis, University of Warwick, 1984)

Parr, Elizabeth, 'Early Leeds printers, publishers and booksellers: an example of the provincial book trade in the eighteenth century', (unpublished BA thesis, University of Leeds, 1973)

Parr, Linda Jean, 'The history of libraries in Halifax and Huddersfield from the mid-sixteenth century to the coming of the public libraries', (unpublished PhD thesis, University of London, 2003)

Swaim, Elizabeth A., 'The Early Book Trade in Halifax. A Preliminary Investigation' (1978), [typescript, accessible at Halifax Central Library.]

Thornton, David, 'Mr Mercury: A Biographical Study of Edward Baines with Special Reference to His Role as Editor, Author, Politician' (unpublished PhD thesis, University of Leeds, 1999)

Topham, Jonathan R., 'An infinite variety of arguments' : the Bridgewater Treatises and British natural theology in the 1830s', (unpublished PhD thesis, University of Lancaster, 1993)

— 'Why the History of Science Matters to Book History' (Unpublished keynote lecture, SHARP annual conference 'The Book in Art and Science', Washington DC USA, presented on 15 July 2011)

Towsey, Mark, 'Reading and the Scottish Enlightenment: Libraries, Readers and Intellectual Culture in Provincial Scotland, c. 1750-c.1820', (unpublished PhD thesis, University of St. Andrews, 2007)

— 'Store their Minds with Much Valuable Knowledge': Agricultural Improvement at the Selkirk Subscription Library, 1799-1814', *The Journal for Eighteenth-Century Studies* (forthcoming)

Treen, Colin, 'Building and Estate Development in the Northern Out-Townships of Leeds, 1781-1914', (unpublished PhD thesis, University of Leeds, 1997)

Digital Sources

Eighteenth Century Collections Online, <http://galenet.galegroup.com/servlet/ECCO>

English Short Title Catalogue, <http://estc.bl.uk>

Leodis, www.leodis.net

Library History Database, <http://web.archive.org/web/20071214010826/http://www.r-alston.co.uk/contents.htm>

Oxford Dictionary of National Biography, <http://www.oxforddnb.com/>

Reading Experience Database, <http://www.open.ac.uk/Arts/RED/>