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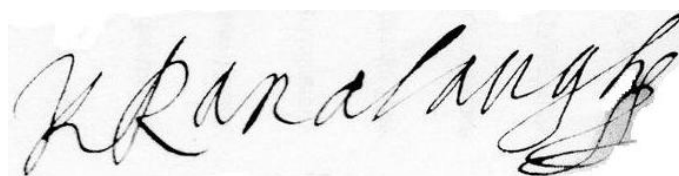
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Katherine Jones, Lady Ranelagh (1615-91):
Science and Medicine in a Seventeenth-Century Englishwoman's
Writing

A handwritten signature in cursive script, likely of Katherine Jones, Lady Ranelagh. The signature is written in dark ink on a light-colored, slightly textured background. The letters are fluid and connected, with a prominent 'K' at the beginning and a large 'R' following it. The signature ends with a decorative flourish.

By

Michelle Marie DiMeo

A thesis submitted in partial fulfilment of the requirements for the
degree of

Doctor of Philosophy in English

University of Warwick, Department of English

August 2009

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Acknowledgments

As the first person in my family to attend university, making it through a Ph.D. was only possible with the help of many people. First and foremost, I need to thank my supervisors, Dr Elizabeth Clarke and Prof. Bernard Capp. Elizabeth encouraged me to move from Chicago to Leamington Spa to study with her, and she helped me through the transition from an M.A. student to a professional academic. Without her help on everything from completing grant applications to improving my writing style, I would not have been able to accomplish so much. Her enthusiasm is inspiring. Upon starting the Ph.D., I was very fortunate to gain Benard Capp as a second supervisor. As this thesis began leaning more towards History than English, he became increasingly important to the project with his incredible range of knowledge. His feedback has always been an impressive combination of detailed, quick and constructive. In addition to being academic mentors, they have offered me personal support and friendship.

My further academic acknowledgments need to start with my undergraduate education, when I was first encouraged to consider postgraduate study. At Roosevelt University in Chicago, Dr Ann Brigham and Dr Gina Buccola introduced me to the foundations of archival research. They also offered essential guidance when I was considering M.A. and Ph.D. courses at various universities and helped me to prepare applications for these programmes.

My M.A. was a time of rapid personal and academic growth, and it was then that I was first introduced to Lady Ranelagh. Conversations with Dr Elaine Leong helped me to formulate ideas for an M.A. dissertation on Ranelagh's receipt books, which later became

the seeds for a Ph.D. thesis. Dr Jayne Archer helped me define the scope for my Ph.D. research proposal; over the years, she has been consistently patient and knowledgeable, offering excellent feedback on written work and suggesting additional primary and secondary sources.

Throughout my four years as a doctoral candidate, I have had the opportunity to meet many scholars working on Lady Ranelagh, all of whom have been encouraging and generous. Prof. Sarah Hutton has dug through her files relating to Lady Ranelagh's *ODNB* entry and suggested helpful references. Dr Ruth Connolly sent me her unpublished work and shared her photocopies. Dr Carol Pal responded to my email queries, and generously shared further information and compared notes with me. I am thankful to each of them for being a model of academic collegiality.

Many specialists on other topics helped by replying to emails. Prof. Michael Hunter has offered thorough answers to my questions relating to Robert Boyle and Royal Society Library MS RB/2/8. Dr Ted McCormick has offered information about William Petty and BL Add. MS 72884. Several archivists at major research libraries were also generous with their time, answering questions about their manuscript collections and providing me with reproductions. Among them, I must thank Arnold Hunt at the British Library, Richard Aspin at the Wellcome Library, Andrew Peppitt at Chatsworth House, Toby Appel at Yale University's Cushing/Whitney Medical Library, and Natalia Sciarini at Yale University's Beinecke Library.

I received several grants which provided me with the financial support necessary to complete my Ph.D., and I must thank the awarding institutions. The University of Warwick granted me with the generous Warwick Postgraduate Research Fellowship. The

Higher Education Funding Council for England provided me with an Overseas Research Scheme award to waive overseas tuition fees. The Wellcome Trust awarded me a Medical Humanities Postgraduate Award which allowed me to travel to conduct essential archival research.

Completing my thesis would not have been possible without the loving support of my friends and family. Throughout the writing-up process, I have felt so lucky to receive constant emails, texts and phone calls from friends who were ‘just checking in’, offering to proofread sections, and even offering to cook meals for me. Julie Sutherland, the only person whom I knew in England when I first moved here, has been a source of support from the very start. She has been helpful in everything from answering practical questions about moving abroad to coping with culture-shock and loneliness. Sarah Easterby-Smith was one of the first friends I made at Warwick University, and she has always been a good listener, whether the matter was personal or academic. This thesis is stronger thanks to her providing me with references and reading sections relevant to her work. I had the benefit of meeting Alice Eardley during my M.A., and she has helped by proofreading parts of this thesis, talking through questions on early modern women’s writing, and just by being a great friend. My partner, Chad Nelson, has had the pleasure of dealing with me at my worst. He has been very supportive during my intense period of thesis revisions by cooking for me, doing extra work around the house, and letting me talk about Lady Ranelagh over dinner yet again. Further, his librarian and IT skills have enabled my research to be more thorough, but less time-consuming. I would also like to remember here the passing of a loving friend: my cat, Jay. Throughout the first half of my

degree, he was either in my lap or next to me on my paperwork. After he passed away, I felt an overwhelming emptiness when working on my thesis. I still miss him.

Finally, this thesis is dedicated to my parents, Danny DiMeo and Judy Puleo. From my childhood, my parents instilled in me the understanding that a university education was mandatory, as they wanted me to have more options in life. They were always supportive of whatever I chose to study, and have continued to be so even as my research has become increasingly incomprehensible to them. They supported me financially and emotionally throughout my education, though I know it has not always been easy for them that their only daughter moved abroad. This thesis is dedicated to them: I hope I've made you proud.

Abstract

Katherine Jones, better known to scholars as Lady Ranelagh, was one of the most eminent, politically influential and intellectually respected women in seventeenth-century England. By the time of her death in 1691, she had the rare honour of having been esteemed by every ruler and his government from Cromwell to William and Mary. She was active in diverse intellectual networks across most of the seventeenth century, including the Great Tew Circle, the Hartlib Circle, and the ‘invisible college’, and was associated with many Fellows of the Royal Society during the first three decades of the Society’s existence. As pious as she was intellectually dexterous, Lady Ranelagh elicited respect and admiration from a group of contemporaries who were remarkably diverse in their political opinions, religious views and social status.

Over the past decade, there have been several brief surveys of Lady Ranelagh’s life and works; this, however, is the first doctoral thesis to focus exclusively on her. By drawing on over one hundred of her letters and three receipt books associated with her, together with references to her in the diaries of her contemporaries and extant letters written to her, this study contextualises her medical and scientific writings in contemporary religious and socio-political thought. By manipulating generic conventions and employing a rhetoric of modesty, Lady Ranelagh presented her intellectual contributions in a manner appropriate for a gentlewoman. Her extant manuscripts make Lady Ranelagh a representative case study of how women could participate in the radical medical and scientific advances of seventeenth-century England. This interdisciplinary approach creates an informed conversation between two subjects which rarely interact — history of science and medicine, and early modern women’s literature — to consider the material practice and social networks of a remarkably important, but hereunto almost ‘lost’, woman.

Definitions and Conventions

Calendar:

I have used the ‘New Style’ calendar throughout this thesis, taking 1 January (not 25 March) as the start of the new year. For example, though Lady Ranelagh was born 22 March 1614/15, I have stated her birth as 22 March 1615. However, I have not made a full conversion to the Gregorian calendar, which would mean adding 10 days to the English dates. For the international letters in the Hartlib Papers that include both dates — the English and continental — I have retained this. Therefore, some letters in this thesis include dates such as ‘5/15 May 1658’. When only one date is given, the English New Style calendar is implied.

Transcriptions:

I have retained most of the original spelling, capitalisation, and punctuation for all manuscript transcriptions. The only minor change I made, for ease of reading, was to modernise u/v and i/j. Contractions and abbreviations have been retained in most cases, but the few that I felt might cause confusion were expanded with [brackets].

Terminology:

‘chymistry’: Lawrence Principe has shown that the terms chemistry and alchemy were used interchangeably in the seventeenth century. He therefore suggests using the contemporary spelling ‘chymistry’ to ‘mean the sum total of alchemical/chemical topics as understood in the seventeenth century’. I have adopted this term throughout the thesis. However, I occasionally use the word ‘alchemical’ to describe activities that are explicitly alchemical by our modern definitions, such as alchemical cipher. See Lawrence Principe, *The Aspiring Adept: Robert Boyle and his Alchemical Quest* (Princeton: Princeton University Press, 1998), pp. 8-10.

recipe & receipt book: In the seventeenth century, contemporaries used the terms ‘receipt’ and ‘receipt book’ to refer to ‘recipe’ and ‘recipe book’. I have used a combination of these terms, referring to the individual item as a ‘recipe’, but the compilation as a ‘receipt book’. I have used recipe because the word receipt was also used in its modern sense, to refer to a proof of purchase. For clarification, I have used the modern terminology, but I qualify it with the type of recipe (such as medical recipe or culinary recipe). Receipt books, however, have several differences from modern recipe books in that they included a wide range of types of recipes (medical, alchemical, sugarcraft, etc.). Further, the volumes often included other material not typical in a modern recipe collection, such as poems, eulogies, or pages in which members of the household practised their handwriting. To capture the unique characteristics of the genre, I have used the contemporary term ‘receipt book’ to refer to these collections.

natural philosophy and science: The word ‘science’ (which comes from the Latin word for ‘knowledge’, *scientia*) was not used to refer to the subject until the mid-nineteenth century. In the seventeenth century, contemporaries called this new subject ‘natural philosophy’, and I use this term throughout the thesis. However, I use the term science when referring to the modern subject History of Science. The word science has been used in the title for the sake of keyword searches and accessibility to a non-specialist audience.

Abbreviations

Add. MS	Additional Manuscript
BL	British Library
<i>Correspondence of Boyle</i>	<i>The Correspondence of Robert Boyle</i> , ed. by Michael Hunter, Antonio Clericuzio and Lawrence Principe, 6 vols (London: Pickering and Chatto, 2001)
<i>Correspondence of Oldenburg</i>	<i>The Correspondence of Henry Oldenburg</i> , ed. & trans. by A. Rupert Hall & Marie Boas Hall, 13 vols (Madison: University of Wisconsin Press, 1965-86)
G.E.C.'s <i>Complete Peerage</i>	G.E. Cockayne, <i>The Complete Peerage</i> , 13 vols (London: St. Catherine Press, 1910-40)
HP	Hartlib Papers, University of Sheffield. <i>The Hartlib Papers: A Complete Text and Image Database of the Papers of Samuel Hartlib (c. 1600-1662)</i> , 2 nd edn, 2 CD-ROM (hriOnline, University of Sheffield, 2002)
ODNB	<i>Oxford Dictionary of National Biography</i> < www.oxforddnb.com >
OED	<i>Oxford English Dictionary</i> < www.oed.com >
V&A NAL	Victoria and Albert Museum, National Art Library

List of Illustrations

Appendix A: Genealogy

A-1: Boyle Family Genealogy

Appendix B: Portraits

B-1: Portrait of Lady Ranelagh

Appendix C: Letters in Lady Ranelagh's Hand

C-1: Yale University, Beinecke Library, Osborn MS 16789: Dated 1659

C-2: British Library, Additional MS 75354, fol. 50r: Dated 1665

C-3: National Archives of Scotland, GD 45/14/237/1: Dated 1690

Appendix D: Letters in Lady Orrery's Hand

D-1: British Library, Stowe MS 206, fol. 1r

Appendix E: Receipt Books

E-1: List of Attributions in British Library, Sloane MS 1367 1367

E-2: British Library, Sloane MS, fols. 38v-39r

E-3: Wellcome Library, Western MS 1340, fol. 19r: Hand One

E-4: Wellcome Library, Western MS 1340, fol. 3v: Hand Two

E-5: Wellcome Library, Western MS 1340, fol. 4r: Hand Three

E-6: Wellcome Library, Western MS 1340, fol. 142r: Scribal Hand (either Hand Two or Hand Four)

E-7: Royal Society Library, MS RB/2/8, fol. 7v: Hand that has been attributed to Lady Ranelagh

Introduction

Offering a funeral eulogy for Katherine Jones, Lady Ranelagh, in December 1691, Gilbert Burnet paid tribute to his long-time friend by declaring that ‘she lived the longest on the publickest Scene, she made the greatest Figure in all the Revolutions of these Kingdoms for above fifty Years, of any Woman of our Age’.¹ Lady Ranelagh was one of the most eminent, politically influential and intellectually respected women in seventeenth-century England. By the time of her death in 1691, she had the rare honour of having been esteemed by every ruler and his government from Cromwell to William and Mary. She was active in diverse intellectual networks across the seventeenth century, including the Great Tew Circle, the Hartlib Circle, and the ‘invisible college’, and was associated with many Fellows of the Royal Society during the first three decades of its existence. As pious as she was intellectually dextrous, Lady Ranelagh elicited respect and admiration from contemporaries remarkably diverse in their political opinions, religious views and social status.

Considering the high public reputation Lady Ranelagh enjoyed in her own time, it is shocking that she remains a shadowy figure in modern scholarship. In part this is because the fragmentary nature of her extant writings meant that her memory became obscured shortly after her death. The way in which the chance survival of archival

¹ Gilbert Burnet, *A Sermon Preached at the Funeral of the Honorable Robert Boyle* (London, 1692), p. 32. This eulogy was actually for her brother Robert Boyle (1627-91), who died one week after her, but Burnet took this as an opportunity to remember Lady Ranelagh, as well. Gilbert Burnet (1643-1715) was born in Edinburgh and first visited England in 1663. He published many theological pamphlets and books and was elected a Fellow of the Royal Society in 1664. In 1674, Burnet moved to London, where he was openly critical of Charles II’s immoral lifestyle and fell out of royal favour. He lived in exile in France during James II’s short reign and was instrumental in promoting William’s claim to the throne. Burnet preached the coronation sermon at William and Mary’s coronation in April 1689 and later that year was consecrated Bishop of Salisbury.

records can distort the history of a period may be seen by comparing the research that has been done on Lady Ranelagh with that on her sister, Mary Rich, Countess of Warwick.² Though Lady Warwick was a much less public, influential figure in the seventeenth century, there have been several historical accounts of her life and works, mainly because her household chaplain, Thomas Woodroffe, preserved and annotated her extensive body of manuscripts after her death.³ By contrast, most of Lady Ranelagh's letters have been scattered in archives held in four countries, and until recently her name was invoked in scholarship only in relation to her brother, the chemist Robert Boyle.⁴ Thomas Birch's mid-eighteenth-century biography of Boyle and his collection of Boyle's works made several references to 'his beloved sister Catharine [sic], viscountess Ranelagh, a lady remarkable for her uncommon genius and knowledge'.⁵ He also included some extracts from letters that had passed between the siblings, some of which only survive in these printed fragments. After Birch, however, very little was written on Lady Ranelagh until the twentieth century. When George Ballard was compiling his *Memoirs of Several*

² Born Mary Boyle in 1624, she was Katherine's younger sister. A rebellious child, Mary defied her family's wishes by marrying Charles Rich in 1641. Charles succeeded to the title as 4th Earl of Warwick in 1659, at which point Mary Rich became Countess of Warwick. In the 1660s, she became increasingly drawn to religion and wrote on the subject in various genres. She died in 1678 at her home in Leighs, Essex. See Sarah Heller Mendelson, 'Chapter II: Mary Rich, Countess of Warwick', in *The Mental World of Stuart Women: Three Stories* (Amherst: University of Massachusetts Press, 1987), pp. 62-115. Early biographical accounts of Mary Rich include Charlotte Fell Smith, *Mary Rich, Countess of Warwick (1625-1678): Her Family and Friends* (London: Longmans, Green, and Co., 1901); Mary E. Palgrave, *Mary Rich, Countess of Warwick (1625-1678)* (London: Dent, 1901); Grace Johnstone, *Leading Women of the Restoration* (London: Digby, 1891), pp. 91-119.

³ See the entry 'Mary Rich (née Boyle), Countess of Warwick (1624-78)' in *ODNB*. Lady Warwick left behind her 'Occasional Meditations' (BL Add. MS 27356), 5 volumes of 'Diaries' (BL Add. MSS 27351-55), and some autobiographical reflections (BL Add. MS 27357). BL Add. MS 27351 has Thomas Woodroffe's transcriptions of exemplary passages in Lady Warwick's works.

⁴ Robert Boyle (1627-91) was one of the most important scientists of seventeenth-century England. Sometimes remembered as the 'Father of Chemistry', Boyle conducted many important experiments with the air-pump and the vacuum chamber. He was extremely prolific, writing over forty books and leaving behind a huge amount of unpublished work diaries, letters, and various other manuscripts. He moved into Lady Ranelagh's Pall Mall home in 1668, where he lived until they died one week apart from each other in December 1691. See Michael Hunter, 'Robert Boyle: An Introduction', *The Robert Boyle Website*, <http://www.bbk.ac.uk/boyle/boyle_learn/boyle_introduction.htm> [Accessed 15 May 2009]

⁵ *The Works of the Honourable Robert Boyle*, ed. Thomas Birch, 6 vols (London, 1744) i, p. 15.

Ladies of Great Britain, Who Have Been Celebrated for their Writings of Skill in the Learned Languages, Arts and Sciences (1752), he stated that ‘there are others, whom I well know to have been persons of distinguished parts and learning, but have been able to collect very little else relating to them’.⁶ He listed nine ladies and eight gentlewomen, and among them was ‘Lady Ranelagh’, demonstrating that even those who knew of her importance were still unable to find more information about her.

The first piece of modern scholarship to consider Lady Ranelagh as a worthy subject in her own right was an essay by Kathleen M. Lynch, entitled ‘The Incomparable Lady Ranelagh’.⁷ This introduced Lady Ranelagh through a brief biography compiled from a preliminary sampling of her extant manuscript letters and references to her in the diaries and letters of her contemporaries that were available in printed editions. While there are some errors in this essay which would be revealed once more of Lady Ranelagh’s extant letters were located, Lynch’s article laid the foundation for future study.⁸

Since Lynch’s essay, there have been a few published articles and chapters in unpublished doctoral theses which have helped to recreate Lady Ranelagh’s life. A chapter in a doctoral thesis by Elizabeth Anne Taylor (later Betsey Taylor Fitzsimon) was the first to correct and expand Lynch’s work.⁹ Taylor offered a more sensitive study of

⁶ George Ballard, *Memoirs of Several Ladies of Great Britain* (Oxford, 1752), p. vii. He also makes later reference to her skill in Hebrew. See p. 321.

⁷ Kathleen M. Lynch, ‘The Incomparable Lady Ranelagh’, in *Of Books and Humankind: Essays and Poems Presented to Bonamy Dobrée*, ed. by John Butt (London: Routledge, 1964), pp. 25-35.

⁸ For example, Lynch says that Lady Ranelagh was a Royalist (though she was a Parliamentarian) and says that Robert Boyle lived in her home for more than 40 years (when actually it was just short of 25 years). See pp. 28, 29, & 34.

⁹ Elizabeth Anne Taylor, ‘Writing Women, Honour, and Ireland: 1640-1715’, 3 vols (unpublished doctoral thesis, University College Dublin, 1999), II, Ch. 4. She later published an article on Lady Ranelagh’s correspondence with Bishop Dopping regarding an Irish translation of the Bible. See Betsey Taylor Fitzsimon, ‘Conversion, the Bible and the Irish Language: the Correspondence of Lady Ranelagh and

Lady Ranelagh's extant letters and pieced together a thorough biography which concentrated mostly on the intersection between Ranelagh's familial obligations and her political and religious activities. Lady Ranelagh was also included in the new *Oxford Dictionary of National Biography*, where Sarah Hutton's entry covers the main biographical details of 'the leading woman intellectual of her generation' by referencing many of the educational, ethical and political projects in which she was involved.¹⁰ Most recently, the work of Ruth Connolly has added to these biographical studies by offering a careful examination of radical politics and religion in Lady Ranelagh's writings and actions.¹¹ Connolly's work drew upon many new archival sources and offered a nuanced discussion of how her political views evolved over the course of the seventeenth century.

As the main facts of Lady Ranelagh's life were recovered, more detailed studies of her interest in and practice of particular subjects, such as natural philosophy and medicine, began to appear. Lynette Hunter's article introduced Lady Ranelagh's involvement in the Hartlib Circle and her practice of domestic medicine, as evidenced by the manuscript receipt books associated with her and by references to her in the Hartlib

Bishop Dopping', in *Converts and Conversion in Ireland, 1650-1850*, ed. by Michael Brown, Charles I. McGrath and Thomas P. Power (Dublin: Four Courts Press, 2005), pp. 157-82.

¹⁰ 'Katherine Jones [née Boyle], Viscountess Ranelagh (1615-1691)' in *ODNB*. This article was originally published in 2004 and is available online. All further references to entries in the *ODNB* will have been taken from the online edition, <www.oxforddnb.com>.

¹¹ Ruth Connolly, "'All our Endeavours Terminate but in This': Self-Government in the Writings of Mary Rich, Countess of Warwick, and Katherine Jones, Lady Ranelagh' (unpublished doctoral thesis, University College Cork, 2004), esp. Chs. 5 & 6. Connolly has since published the main arguments from Chapter 6 in two articles: "'A Wise and Godly Sybilla": Viscountess Ranelagh and the Politics of International Protestantism', in *Women, Gender and Radical Religion in Early Modern Europe*, ed. by Sylvia Brown (Leiden: Brill, 2007), pp. 285-306, and 'A Proselytising Protestant Commonwealth: The Religious and Political Ideals of Katherine Jones, Viscountess Ranelagh', *The Seventeenth Century*, 23 (2008), 244-64. Also see her article 'A Manuscript Treatise of Viscountess Ranelagh', *Notes and Queries*, 53 (2006), 170-72.

Papers archive at the University of Sheffield.¹² Hunter's article paved the way for those interested in Lady Ranelagh's medical and natural philosophic activities, and her ideas were further developed in chapters in the recent doctoral theses of Jayne Archer and Carol Pal. Jayne Archer used two receipt books associated with Lady Ranelagh to recreate her medical network and clarify the extent of her implementation of chymical methods in her domestic medical practice.¹³ Carol Pal conducted extensive searches through the Hartlib Papers archive and consulted extant letters held in various regional and national libraries to offer the most substantial recent contribution on Lady Ranelagh's intellectual circle.¹⁴ Pal showed that Lady Ranelagh was an active intelligencer at the centre of the Hartlib Circle and mapped the widespread correspondence network that was instrumental in her medical, political and religious projects.

The recent scholarly interest in Lady Ranelagh has identified the need for a more thorough examination of her extant manuscripts to provide a more comprehensive examination of her life and intellectual interests. This is the first doctoral thesis to focus exclusively on Lady Ranelagh, introducing a wealth of new archival material to offer both an overview of her life and a detailed assessment of her knowledge of and experimentation with medicine and natural philosophy. It sets out to create an informed conversation between two disciplines which rarely interact — the history of science and medicine and early modern women's writing. Drawing on intellectual resources that range from palaeography to literary theories of authorship and subjectivity, and from

¹² Lynette Hunter, 'Sisters of the Royal Society: The Circle of Katherine Jones, Lady Ranelagh', in *Women, Science and Medicine 1500-1700*, ed. by Lynette Hunter and Sarah Hutton (Stroud, Gloucestershire: Sutton, 1997), pp. 178-97.

¹³ Jayne Archer, 'Women and Alchemy in Early Modern England' (unpublished doctoral thesis, University of Cambridge, 2000), Ch. 7.

¹⁴ Carol Pal, 'Republic of Women: Rethinking the Republic of Letters, 1630-1680', 2 vols (unpublished doctoral thesis, Stanford University, 2006), I, Ch. 4.

feminist historiography of science to how network theory is shaped by genre, it addresses the question: how much did Lady Ranelagh know about natural philosophy and medicine, and with whom did she discuss these topics? It then moves on to explore more wide-ranging issues. How did gender shape her ability to participate in and contribute to these scientific subjects? How did she self-fashion an image of authority both in her daily actions and in her writings? In many ways, the case study of Lady Ranelagh opens new avenues for exploration into early modern intellectual women more generally, for her example demonstrates that some women were able to acquire an impressive public reputation without losing the respect of society, and without being ‘silent and obedient’.¹⁵

The Sources

Lady Ranelagh always confined herself to manuscript form, deliberately avoiding print. Robert Boyle commented (approvingly) on her practice when he dedicated his theological work, *Occasional Reflections Upon Several Subjects*, to her in 1665. Boyle began by apologising for offering:

the present Trifles to one, that deserves the Noblest Productions of (what she is so great a Mistress of) Wit, and Eloquence. Upon whose Account she is wont to persuade Piety as Handsomly in her Discourses, as she expresses it Exemplarily in her Actions; and might, if her Modesty did less confine her Pen to Excellent Letters, both make the Wits of our Sex envy a Writer of Hers.¹⁶

While scholars have noted that the ‘stigma of print’ applied to both gentlemen and women, print posed a particular problem for women. By offering herself in print to the public, a woman would be flouting the female conventions of domesticity and modesty,

¹⁵ Research into early modern women’s conduct books has shown that they dictated that women should be ‘chaste, silent and obedient’. See Suzanne W. Hull, *Chaste, Silent and Obedient: English Books for Women 1475-1640* (San Marino, CA: Huntington Library Publications, 1982).

¹⁶ Robert Boyle, *Occasional Reflections Upon Several Subjects* (London, 1665), sigs. A4v-A5r.

and such immodesty could invite damaging speculation about her chastity.¹⁷ Manuscript writing still allowed for wide textual circulation, and its genteel associations and the promise of selective readership made it a far more respectable way in which women could ‘publish’ their texts.¹⁸ Over the past two decades, the move towards recovering female manuscript writings has revealed that women were more involved in literary activities than had been previously supposed, and that they wrote in almost every contemporary genre.¹⁹ For example, the Perdita Project, first established at Nottingham Trent University in 1997 and completed at the University of Warwick in 2005, discovered over 500 manuscripts compiled by over 250 different women, many of whom were previously ‘lost’.²⁰

¹⁷ The first article to draw a connection between print and social status was J.W. Saunders, ‘The Stigma of Print: A Note on the Social Bases of Tudor Poetry’, *Essays in Criticism*, 1 (1951), 139-64. Since then, many scholars have debated this topic, providing evidence both for and against Saunders’s thesis. For an example of those who have challenged the ‘stigma of print’, see Jean R. Brink, ‘Manuscript Culture Revisited’, *Sidney Journal*, 17 (1999), 19-30. For those who have addressed the ‘stigma of print’ with specific reference to gender, see Wendy Wall, *The Imprint of Gender: Authorship and Publication in the English Renaissance* (Ithaca: Cornell University Press, 1993); Margaret J.M. Ezell, *The Patriarch’s Wife: Literary Evidence and the History of the Family* (Chapel Hill: University of North Carolina Press, 1987), esp. Ch. 3.

¹⁸ On ‘scribal publication’, see Harold Love, *Scribal Publication in Seventeenth-Century England* (Oxford: Clarendon Press, 1993); Arthur Marotti, *Manuscript, Print, and the English Renaissance Lyric* (Ithaca: Cornell University Press, 1995); Peter Beal, *In Praise of Scribes: Manuscripts and Their Makers in Seventeenth-Century England* (Oxford: Clarendon Press, 1998); Jane Stevenson, ‘Women, Writing and Scribal Publication in the Sixteenth Century’, *English Manuscript Studies 1100-1700*, 9 (2000), 1-32; Michelle O’Callaghan, ‘Publication: Print and Manuscript’, in *A Companion to English Renaissance Literature and Culture*, ed. by Michael Hattaway (Oxford: Blackwell, 2003), pp. 81-94.

¹⁹ The first book to reproduce the writings of manuscript women writers was *Kissing the Rod: An Anthology of Seventeenth-Century Women’s Verse*, ed. by Germaine Greer et al (London: Virago, 1988). Since then, anthologies of early modern women’s writing have been careful to include manuscript texts, and literary criticism on the subject has become a major industry. For an overview of the past and prospective future of studies on early modern women’s writing, see Elizabeth Clarke and Lynn Robson, ‘Why are we still “Kissing the Rod”? The Future for the Study of Early Modern Women’s Writing’, *Women’s Writing*, 14 (2007), 177-93, as well as the other articles in this special journal issue on early modern women’s writing.

²⁰ Perdita means ‘lost woman’, and the goal of the project was to recover as many ‘lost women’ as possible. Though the Perdita Project included works in over 100 genres — many of which were not ‘literary’ in a conventional sense of the word — letters were not included. Digital reproductions are now available for many of these manuscripts in the database *Perdita Manuscripts: Women Writers, 1500-1700* (Adam Matthew Digital, 2008).

Lady Ranelagh's decision to 'confine her Pen to Excellent letters' allowed her to maintain an influential public profile without endangering her modesty. By strategically employing her sophisticated rhetorical skills, Lady Ranelagh manipulated epistolary conventions to produce significant letters on a wide variety of topics. From politically persuasive letters aimed at Members of Parliament to authoritative medical notes written to intimate family members, the range of her letters demonstrates that she used the genre to considerable effect.²¹ Moreover, as will be shown in Chapter 2, some of the letters addressed to one person were then deliberately circulated to a much wider circle, suggesting that they were 'functioning, in effect, as "published" manuscript treatises'.²²

Because Lady Ranelagh never printed her letters or other writings, and because only a few of her letters have been published since, this thesis has required extensive archival research.²³ No will exists, and no collection of her personal papers has ever been recovered.²⁴ Instead, the majority of her extant letters have been preserved in the archives of male family members and friends. The nature of the archive adds weight to Ruth Perry's observation that 'if historians want to study the philosophical contributions of

²¹ For more on gender and letter writing, see James Daybell, 'Introduction', in *Early Modern Women's Letter Writing, 1450-1700*, ed. by James Daybell (Basingstoke: Palgrave, 2001), pp. 1-15.

²² Jonathan Gibson, 'Letters', in *A Companion to English Renaissance Literature and Culture*, pp. 615-19 (617).

²³ For copies of her letters printed in the eighteenth century, see *The Works of the Honourable Robert Boyle*, ed. by Thomas Birch; *A Collection of the State Papers of John Thurloe, Esq.*, ed. by Thomas Birch, 7 vols (London: 1752), VII, pp. 395-397; *State Papers Collected by Edward, Earl of Clarendon*, 3 vols, (Oxford: Clarendon, 1767-86), II (1773), pp. 166-68. In the nineteenth century, an excerpt from a letter from Lady Ranelagh was quoted in a letter from Hartlib to John Worthington; see *The Diary and Correspondence of Dr John Worthington*, ed. by James Crossley, 3 vols (Manchester, 1847-86), I (1847), p. 166. While many of the original manuscripts for these letters are still extant, there are four letters in the Birch's edition of Boyle's *Works* and one letter in Thurloe's *State Papers* which only exist in these printed copies. The original letter of Lady Ranelagh to Hartlib which is published only in extract in the Worthington *Correspondence* has also never been found.

²⁴ This is based on my own archival research, and has been confirmed by other scholars working on Lady Ranelagh, including Ruth Connolly and Lynette Hunter. For Hunter, see 'Introduction' in *The Letters of Dorothy Moore, 1612-64: The Friendships, Marriage, and Intellectual Life of a Seventeenth-Century Woman*, ed. by Lynette Hunter (Aldershot, Hants: Ashgate, 2004), pp. xv-liv.

women in the seventeenth century, they must not look for published papers, but to the archival records of learned men'.²⁵

The majority of Lady Ranelagh's extant letters are in England. The British Library in London holds the greatest number (thirty-three), the majority being in the collected papers of her brother Richard, Earl of Burlington and Cork.²⁶ Chatsworth House in Derbyshire holds twenty-two of her letters in its extensive collection of Boyle family manuscripts.²⁷ The Hartlib Papers archive, now at the University of Sheffield, contains six letters written by Lady Ranelagh and almost 200 references to her in other documents.²⁸ West Sussex Record Office in Chichester holds a collection of twenty letters that she wrote to her brother Roger, Earl of Orrery, and his wife, Margaret, Countess of Orrery.²⁹ There are a few additional letters scattered elsewhere, including eleven at the Royal Society Library in London, five in the Bodleian Library at Oxford University, seven at the National Archives (previously Public Records Office) in London,

²⁵ Ruth Perry, 'Radical Doubt and the Liberation of Women', *Eighteenth-Century Studies*, 18 (1985), 472-93 (482).

²⁶ BL Add. MS 75354, fols. 50-119 comprises twenty-nine letters from Lady Ranelagh to her brother, the Earl of Burlington and Cork. The British Library also has a few additional copies of her letters in the papers of other men whom she knew. See BL Add. MS 4292, fols. 278-79, Lady Ranelagh to Robert Boyle, 11 September 1677; BL Add. MS 72884, fols. 5-6, Lady Ranelagh to William Petty, undated; BL Add. MS 46932, Copy Letter, Lady Ranelagh to Lord Broghill, 9 Feb. 1650; BL Add. MS 17017, Lady Ranelagh to Laurence Hyde, 23 November [1676].

²⁷ There is one letter from Lady Ranelagh to her father, the first Earl of Cork. See Cork MSS, Box 21, Letter 61. There are twenty-one letters from Lady Ranelagh to her brother, the second Earl of Cork. See Cork MSS, Box 30, Letters 95, 96, 98, 99; Cork MSS, Box 31, Letters 4, 11, 12, 15, 17, 18, 36, 46, 47, 50, 52, 53, 58*; Cork MSS, Box 33, Letters 12, 13, 59, 63. Additionally, there are several letters written to her and several references to her in the diaries and letters of her family members. For more information, see the *Calendar of the Lismore Manuscripts with Index of Matters A.D. 1396-1774* (private publication: no year), and see *The Lismore Papers*, 2 Series, 10 vols, ed. by Alexander Balloch Grosart (London, 1886-88).

²⁸ HP 35/2/56-59 includes extracts of four letters in German; HP 66/8/1 is an extract of recipes from one of her letters; HP 26/13/1A-2B is a list of questions with a letter, which she sent to Hartlib to be forwarded to Sir Cheney Culpeper. While very few of her letters in the archive have been preserved, the Hartlib Papers is one of the most important keys to discovering Lady Ranelagh's intellectual activities because of the wealth of references to her in Hartlib's diaries, the 'Ephemerides', and in the letters of fellow members of the Hartlib Circle. This will be discussed in Chapter 2 below.

²⁹ West Sussex Record Office, Petworth House, Orrery MS 13219, unpaginated. The note on the record reads '19 Letters from Lady Ranelagh to Lord and Lady Orrery', but there are actually 21 letters in this folder, one of which is a fragment in Lady Orrery's hand.

and one at the National Art Library in the Victoria & Albert Museum in London.³⁰ While these comprise the majority of her extant letters, a few more survive in Scotland, Ireland and the United States. The National Archives of Scotland in Edinburgh has five letters from Lady Ranelagh to Margaret Hamilton, Countess of Panmure and one to Anne Hamilton, Duchess of Hamilton.³¹ In Ireland, the Armagh Public Library holds four of her letters in the papers of Bishop Anthony Dopping, and the National Archive of Ireland in Dublin has two of her letters.³² The Beinecke Library at Yale University has one bundle of the Hartlib Papers, in which there are three letters from Lady Ranelagh, and Yale's Cushing/Whitney Medical Library holds one letter from Lady Ranelagh to the Earl of Clarendon.³³ The archives in which her letters have been preserved are mostly those of male family and friends, suggesting a gendered reason for her fragmentary

³⁰ Nine of her letters at the Royal Society Library are to Robert Boyle and have been printed in *The Correspondence of Robert Boyle*, ed. by Michael Hunter, Antonio Clericuzio, and Lawrence M. Principe, 6 vols (London: Pickering and Chatto, 2001). These are RB/3/5/6; RB/3/5/7; RB/3/5/8; RB/3/5/10; RB/3/5/11; RB/3/5/12; RB/3/5/13; RB/3/5/14; RB/3/5/15. There is also one letter to John Eliot and one to an unknown correspondent, probably to Samuel Hartlib. These are RB/3/5/9 and RB/3/6/3, respectively. Henry Oldenburg's letterbook also includes extracts from at least one of her letters, probably from 1657, which I did not include in this count because it is not a full letter, and the amount of letters from which he copied is unclear. See Royal Society Library, MS/1, fols. 190-94. In addition to these letters by Lady Ranelagh, the Royal Society Library holds several letters written to her by Robert Boyle and John Beale. Four of Lady Ranelagh's letters held at the Bodleian Library are addressed to Edward Hyde, Earl of Clarendon. See Bod., Clarendon State Papers (CSP), vol. 23, fols. 113-15; CSP, vol. 78, fols. 230-31; CSP, vol. 79, fols. 73-74 & 269-272. The final letter is to Bishop Gilbert Burnet, Bod. MSS Add, A. 191, fol. 113. The National Archives holds three of her letters to Joseph Williamson (SP 29/197; SP 29/230; SP 29/251B), two letters to Robert Thornhill (E 192/14/5; E 192/14/11) one letter to Daniel Finch, Earl of Nottingham (SP 3/30), and one letter to Elizabeth, Queen of Bohemia (TS 23/1/43, fols. 62-63). The Victoria and Albert Museum, National Art Library, holds the original copy of this letter to the Queen of Bohemia (Forster MS 454, Letter 74, 40/1, fols. 74-75).

³¹ National Archives of Scotland, GD 45/14/237/1-5 and GD 406/1/3797. The Countess of Panmure and Duchess of Hamilton will be introduced properly below in Chapter 1.

³² See Armagh Public Library, Collection of State Papers Connected with Meath, 3 Vols, MS 26544, letter numbers 10, 17, 20, & 21. The two letters at the National Archive of Ireland are Ormonde MS 2383 f 299 (4952) and a letter to her father, the Earl of Cork, 26 October 1642, which was in an uncatalogued folder of Lismore Papers that has been lost since Kathleen Lynch cited it in 'The Incomparable Lady Ranelagh'.

³³ Beinecke Library, Yale University, James Marshall and Marie-Louise Osborn Collection (OSB), MSS File 12473; OSB MSS 16799; OSB MSS 16789. Harvey Cushing/John Hay Whitney Medical Library, Yale University, Letter, Lady Ranelagh to the Earl of Clarendon, uncatalogued letter.

historical record.³⁴ Once duplicate copies of single letters are eliminated from the count, and letters that exist only in printed form are added to it, over one hundred different letters by Lady Ranelagh have been located. They range in date of composition from 1642 to 1690, spanning from the year she moved to England until one year before her death. This adds up to an impressive number of extant letters for a seventeenth-century woman, and the collection affords a view of most of Lady Ranelagh's adult life told in her own words.

Boyle's comment about Lady Ranelagh restricting herself to letter-writing was, however, not entirely correct. While the vast majority of her extant written work is in the form of letters, Lady Ranelagh also explored other manuscript genres. The Hartlib Papers archive and the extant manuscript receipt books associated with her demonstrate that she also wrote and circulated recipes for medical cures, cookery and household simples, which will be explored later in this thesis. She also composed at least two substantial treatises, though only one of them survives. Lady Ranelagh's 'Discourse concerning the Plague' is a lengthy theological treatise arguing for toleration for nonconformists during the plague of 1665, many of whom were being confined in dangerously unhealthy and overcrowded prisons because of the Conventicle Act of 1664. This discourse survives as a fair copy holograph manuscript in the Boyle Papers archive in the Royal Society Library.³⁵ While this is Ranelagh's only treatise to have survived, we know there was at least one more because of a reference in a letter from John Beale to Hartlib written in 1657. Beale begins his letter by explaining, 'I have now spent a whole day in meditating

³⁴ Ruth Perry, 'Radical Doubt', p. 482.

³⁵ Royal Society Library, RB/1/14/4, fols. 27-42. Also see Ruth Connolly, 'A Manuscript Treatise'.

upo the r^t hon^{ble} ye Lady R[anelagh]s discourse & p[ro]posalls concerning Dreames'.³⁶

He then delivers a twelve-page response to Lady Ranelagh's discourse, considering mostly theological topics such as God's ability to communicate through dreams. It is clear from the clean presentation of her extant 'Discourse concerning the Plague' and from Beale's choice to respond to Lady Ranelagh's discourse on dreams via Hartlib, that these two documents were intended for private circulation.

There are also three extant receipt books, held in archives in London, which have been attributed to Lady Ranelagh. The British Library holds a small octavo filled with mostly chymical recipes, with the title page 'My Lady Rennelagh's Choice Receipts as also some of Capt Willis who valued them above gold'.³⁷ The Wellcome Library has a fat quarto containing medical and culinary recipes which has been attributed to the 'Boyle family', and the catalogue states that the 'older hand ... is perhaps that of Katherine, afterwards Lady Ranelagh'.³⁸ A third volume, a medical commonplace book in multiple hands held in the Royal Society Library, is described as a 'medical commonplace book used by Boyle and Lady Ranelagh'. Michael Hunter's description of the documents lists several pages as written in Lady Ranelagh's hand.³⁹ This thesis is focused on Lady Ranelagh's knowledge of medicine and natural philosophy, and these receipt books are therefore important sources for judging her domestic practice of these subjects and for

³⁶ Letter, [John Beale] to [Hartlib], 28 May 1657. Hartlib Papers 25/5/1A-12B.

³⁷ BL Sloane MS 1367.

³⁸ Wellcome Library, Western MS 1340. Its catalogue of manuscripts may be viewed online at <<http://archives.wellcome.ac.uk>>. Also see Amanda Engineer, 'The 17th-Century "Lady Doctor"' in *Friends of the Wellcome Library and Centre Newsletter*, Winter 2003, pp. 2-5.

³⁹ Royal Society Library, RB/2/8 (previously MS 41). See Michael Hunter, *Letters and Papers of Robert Boyle: A Guide to the Manuscripts and Microfilm* (Bethesda, MD: University Publications of America, 1992), p. 73 and see the recently revised version, Michael Hunter, *The Boyle Papers: Understanding the Manuscripts of Robert Boyle* (Aldershot: Ashgate, 2007), p. 516. The Royal Society archive catalogue may be viewed online at <<http://royalsociety.org/DServe/dserve.exe?dsqApp=Archive&dsqDb=Catalog&dsqCmd=Search.tcl>>.

piecing together the medical network through which she gained her information. Chapter 4, below, offers the first thorough examination of these manuscripts to gain a clearer understanding of her relationship to each text.

In addition to Lady Ranelagh's own writings, the thesis also considers references to her in the manuscripts of her contemporaries. As noted, an extensive search through the Hartlib Papers archive produced almost 200 references to Lady Ranelagh, most of them in letters between other correspondents and in Samuel Hartlib's diaries, 'The Ephemerides'. Many of the diaries of important male contemporaries, available in modern editions, also make reference to her striking personality and exceptional piety and wit, including those of Robert Hooke, Bulstrode Whitelocke, and Henry Hyde, second Earl of Clarendon.⁴⁰ The unpublished diaries of Lady Ranelagh's siblings, such as those by Mary Rich, Countess of Warwick; Richard Boyle, Earl of Cork and Burlington; and Richard's wife Elizabeth, Countess of Cork and Burlington, offer a more intimate glimpse at her charitable activities and commitment to her family.⁴¹ These important references are helpful for contextualising her extant letters and in giving us a more complete view of her activities and the reputation she maintained.

Methodology

To extract the greatest amount of information from these extant manuscripts, this thesis has employed a range of interdisciplinary methodologies. It has sought to forge a

⁴⁰ *The Diary of Bulstrode Whitelocke 1605-1675*, ed. by Ruth Spalding (Oxford: Oxford University Press, 1990); *The Diary of Robert Hooke 1672-1680*, ed. by Henry W. Robinson and Walter Adams (London: Wykeham, 1968); *The Correspondence of Henry Hyde, Earl of Clarendon, and of his Brother, Laurence Hyde, Earl of Rochester; with the Diary of Lord Clarendon from 1687-1690*, 2 vols., ed. by Samuel Weller Singer (London: Colburn, 1828).

⁴¹ BL Add. MSS 27351-55, Diaries of Mary Rich, Countess of Warwick; Chatsworth House, Cork MSS, Miscellaneous Box 1, Diaries of Lord Burlington, 3 vols.; Chatsworth House, Cork MSS, Miscellaneous Box 5, Journal of Elizabeth (Clifford), Lady Burlington, 1650s-1688.

link between subjects which have rarely had the opportunity to interact due to a dearth of archival material. While there are studies on seventeenth-century Englishwomen's writings about natural philosophy and medicine, the majority focus on printed texts. Lynette Hunter, Elaine Hobby, Lisa Forman Cody and others have used printed books by women to represent women's medical and technical knowledge, and their 'ability' to penetrate the print market is usually presented as a great achievement.⁴² Studies of early modern women's scientific reasoning and their contribution to the developing field of natural philosophy also tend to analyse printed texts, whether in poetry or prose; it is therefore unsurprising that most detailed studies of early modern women and science focus on Margaret Cavendish, Duchess of Newcastle.⁴³

Yet print was an exceptional choice for most early modern women writers. Basing a survey or case-study of women's writings or ideas on medicine and natural philosophy on printed sources alone would therefore fail to reveal the full scope of women's literary activity or intellectual interests. Instead, we must turn to manuscript archives, and here we find a much wider array of women's extant writings. While there has been much new

⁴² Lynette Hunter, 'Women and Domestic Medicine: Lady Experimenters, 1570-1620', in *Women, Science and Medicine 1500-1700*, pp. 89-107; Elaine Hobby, *Virtue of Necessity: English Women's Writing 1649-88* (London: Virago, 1988), esp. Ch. 7; Patricia Crawford, 'Women's Published Writings 1600-1700', in *Women in English Society 1500-1800*, ed. by Mary Prior (London: Methuen, 1985), pp. 211-74; Elizabeth Tebeaux, 'The Emergence of Women Technical Writers in the 17th Century: Changing Voices Within a Changing Milieu', in *Three Keys to the Past: the History of Technical Communication*, ed. [by] Teresa C. Kynell and Michael G. Morgan (Westport, CT: Greenwood, 1999), pp. 105-122; Lisa Forman Cody, 'Introductory Note', in *Writings on Medicine: The Early Modern Englishwoman*, Series 2, vol. 4 (Aldershot, Hants: Ashgate, 2002), pp. ix-xviii; Stanton J. Linden, 'Women in Medicine on the Eve of the Enlightenment: Mrs Mary Trye's *Medicatrix: or the Woman-Physician* (1675)', in *Transactions of the Eighth International Congress on the Enlightenment III*, ed. by H.T. Mason (Oxford: The Voltaire Foundation at the Taylor Institution, 1992), pp. 1891-94; Elizabeth Lane Furdell, *Publishing and Medicine in Early Modern England* (Rochester, NY: Rochester University Press, 2002), esp. Ch. 5.

⁴³ Of course, the fact that Cavendish was a prolific writer and left a huge range of works is another reason for the scholarly concentration on her. For some examples of this scholarship, see Bronwen Price, 'Feminine Modes of Knowing and Scientific Enquiry: Margaret Cavendish's Poetry as Case Study' in *Women and Literature in Britain 1500-1700*, ed. by Helen Wilcox (Cambridge: Cambridge University Press, 1996), pp. 117-39 and see the essays in the 'Natural Philosophy' section of *A Princely Brave Woman: Margaret Cavendish, Duchess of Newcastle*, ed. by Stephen Clucas (Aldershot: Ashgate, 2003), pp. 185-254.

activity in studying and anthologising women's manuscript writings, almost none of it has touched on women's medical and scientific writings.⁴⁴ It appears as though these are two sub-fields within the study of early modern women's writing — women's manuscripts and women's printed medical and scientific works. But there is no reason why the two should not interact. Over the past decade, more literary historians have begun considering 'non-literary' genres such as diaries, letters and receipt books, as these forms of writing appear to have been preferred by most early modern women, or at least they exist in a far greater quantity.⁴⁵ Ruth Perry has suggested that 'the less conspicuous forms of diary, letters and memoir' were more appropriate genres for intellectual women to explore their literary and philosophical ambitions.⁴⁶ In this thesis, by focusing on a seventeenth-century Englishwoman's manuscripts about medicine and natural philosophy, I hope to encourage similar studies on other early modern women, as an analysis of their

⁴⁴ I have not found one anthology of early modern women's writing to include a transcription from a woman's manuscript treatise, letter or receipt book that deals explicitly with medicine. The closest example is Sarah Hutton's revised edition of the philosophical letters of Anne Conway. See *The Conway Letters*, ed. by Marjorie Hope Nicolson, rev. by Sarah Hutton (Oxford: Oxford University Press, 1992). There have been some collections of scholarly essays that include an essay on women's manuscript receipt books. See Catherine Field, "'Many hands hands': Writing the Self in Early Modern Women's Recipe Books", in *Genre and Women's Life Writing in Early Modern England*, ed. by Michelle M. Dowd and Julie A. Eckerle (Aldershot: Ashgate, 2007), pp. 49-63; Sara Pennell, 'Perfecting Practice? Women, Manuscript Recipes and Knowledge in Early Modern England', in *Early Modern Women's Manuscript Writing: Selected Papers from the Trinity/Trent Colloquium*, ed. by Victoria E. Burke and Jonathan Gibson (Aldershot: Ashgate, 2004), pp. 237-58 and Sara Pennell, 'Introduction' in *Women in Medicine: Remedy Books, 1533 - 1865*, ed. by Sara Pennell (Woodbridge, CT: Primary Source Microfilm, 2004), no page numbers. Aside from manuscript receipt books, women's medical and scientific writings in manuscript have not received much scholarly attention. The reason for this neglect is probably twofold: a lack of medical and scientific expertise among those studying women's writing, and a substantial body of such manuscripts has not yet been identified.

⁴⁵ For example, nearly one third of the manuscripts recovered by the Perdita Project are receipt books, and James Daybell has identified that 'an estimated 10,000 items of women's correspondence are extant just for the period to 1642'. See 'Introduction', *Early Modern Women's Letter Writing*, p. 3. For examples of work on women's non-literary genres, see *Genre and Women's Life Writing in Early Modern England*, ed. by Michelle M. Dowd and Julie A. Eckerle (Aldershot: Ashgate, 2007), in which the majority of essays concern non-literary genres. Also see the essays in James Daybell's *Early Modern Women's Letter Writing*.

⁴⁶ Perry, 'Radical Doubt', p. 482.

manuscripts will allow a view into how women absorbed and even helped shape the rapidly changing intellectual developments of the period.

My literary methodology can be best defined as a feminist historicist approach informed by material readings of the text. By feminist, I mean that I treat gender as an essential category of historical analysis, considering how contemporary ideologies shaped women's lives. While there was much debate in the late-1980s and early-1990s about whether feminism and historicism could work together, Jennifer L. Feissner has argued that the current critical consensus is to work towards a fuller historical model informed by feminist insights.⁴⁷ In doing so, we must construct a history that regards women and their activities as valid subjects for study, and consider how they can shape dominant historical models, such as periodisation. By studying Lady Ranelagh's writings within a gendered cultural context, many interesting historical questions arise. For example, I consider how writing in traditionally 'domestic' genres paradoxically enabled her to create and maintain a very public elite profile. Because my goal is to better understand how Lady Ranelagh's writings functioned in her time, I use the material artefact to address questions of readership and literary authority. Most of her manuscripts have received no, or very little, scholarly attention, so an examination of the physical properties of each text provides further clues about its function — meaning both the author's intended function and how the text was subsequently read, used and distributed by others. As George Justice, Heather Wolf, and others have shown, history of the book scholarship — with its emphasis on palaeography and bibliography — is still essential for

⁴⁷ Jennifer L. Feissner, 'Is Feminism a Historicism?', *Tulsa Studies in Women's Literature*, 21 (2002), 45-66 (45-46). For examples of the early debate of the 1980s and 1990s, see Carol Thomas Neely, 'Constructing the Subject: Feminist Practice and the New Renaissance Discourses', *English Literary Renaissance*, 18 (1988), 5-18, and Jean Howard, 'Feminism and the Question of History: Resituating the Debate', *Women's Studies: An Interdisciplinary Journal*, 19 (1991), 149-57.

an accurate reading of early modern texts.⁴⁸ By incorporating a discussion of the physical manuscript with an analysis of the written word on the page, I hope to gain a clearer understanding of Lady Ranelagh's relationship to her manuscripts, a study that is particularly important in the case of documents written in multiple hands (as evidenced in two of her manuscript receipt books) or which exist only in copies (such as her German letters in the Hartlib Papers).

As this study focusses on natural philosophy and medicine, recourse to the disciplines of history of science and history of medicine was also necessary and invaluable. Though the two are often brought together and certainly overlap in many ways, this thesis will treat them as two separate disciplines, because a gendered perspective of science and medicine in seventeenth-century England reveals that they require two distinct contexts. Medicine, at one level, was seen as part of a housewife's duties, as she was expected to take care of her family and possibly also of poor members in her community.⁴⁹ The numerous printed books on housewifery that include a section on medicine, and the range of extant medical receipt books in women's hands, demonstrate the contemporary prevalence of this idea.⁵⁰ Recent research by Sara Pennell and Elaine Leong has shown how domestic medicine functioned as the first option for self-treatment, and that physicians and surgeons were only called in when domestic

⁴⁸ George L. Justice, 'Introduction', in *Women's Writing and the Circulation of Ideas: Manuscript Publication in England, 1550-1800*, ed. by George L. Justice and Nathan Tinker (Cambridge: Cambridge UP, 2002), pp. 1-16; Heather Wolfe, ed., *Elizabeth Cary, Lady Falkland: Life and Letters* (Cambridge: Renaissance Texts from Manuscripts Publications, 2001); James Daybell and Peter Hinds, eds. *Material Readings of Early Modern Culture, 1580-1700* (Forthcoming: Basingstoke: Palgrave, 2010). The collection *Early Modern Women's Manuscript Poetry*, ed. by Jill Seal Millman and Gillian Wright (Manchester: Manchester University Press, 2005) stresses the importance of the material text by beginning each introduction with a discussion of the manuscript (not the author). The University of Pennsylvania Press has a series on 'Material Texts' and Palgrave is starting a series entitled 'Material Readings'.

⁴⁹ Christina Hole, *The English Housewife in the Seventeenth Century* (London: Chatto & Windus, 1953); Alison Sim, *The Tudor Housewife* (Gloucestershire: Sutton, 2000).

⁵⁰ Jennifer Stine, 'Opening Closets: The Discovery of Household Medicine in Early Modern England' (unpublished doctoral thesis, Stanford University, 1996).

medicine had failed.⁵¹ Natural philosophy, by contrast, was not regarded as a subject suitable for women, as it did not possess a domestically utilitarian function. While some elements of the new experimental philosophy could be incorporated into women's domestic duties (such as the use of distillation equipment for the production of medicinal waters), abstract thought and explorations into nature remained a gentlemanly pursuit throughout the seventeenth century. As women were simultaneously encouraged to practise medicine and discouraged from studying natural philosophy, the two subjects are treated separately in this study. The thesis has therefore been divided into two halves — natural philosophy and medicine — with two chapters on each subject.

While Lady Ranelagh is relatively unknown to literary scholars, historians of science have long recognised her contribution to Robert Boyle's development as a chemist. But the extent of her interest in the subject, independent of her brother, has never received detailed study. The thesis therefore strives to present a better understanding of Lady Ranelagh's knowledge of natural philosophy and of how her practice was shaped by personal and cultural ideology. In this sense, it functions as an intellectual biography of a leading female figure who was active both before and after the Restoration — a period which Londa Schiebinger has described as the 'turning point' after which women were no longer allowed to practise natural philosophy.⁵² This study will consider Lady Ranelagh in the context of such feminist historiographies of science, to consider how far her practice of natural philosophy was affected by the establishment

⁵¹ Elaine Leong and Sara Pennell, 'Recipe Collections and the Currency of Medical Knowledge in the Early Modern "Medical Marketplace"', in *Medicine and the Market in England and Its Colonies, c. 1450-c.1850*, ed. by Mark S. R. Jenner and Patrick Wallis (London: Palgrave, 2007), pp. 133-52.

⁵² Londa Schiebinger, *The Mind has no Sex? Women in the Origins of Modern Science* (Cambridge, MA: Harvard University Press, 1989). Schiebinger's initial theory has since been debated by scholars who have found examples of women who practised natural philosophy after the foundation of male-only institutions across Western Europe. See the many interesting essays in *Men, Women, and the Birthing of Modern Science*, ed. by Judith P. Zinsser (DeKalb, IL: Northern Illinois University Press, 2005).

of the key and all-male institution, the Royal Society, in the latter half of the seventeenth century.

Because I am concerned with Lady Ranelagh's material practice of natural philosophy, I will not be engaging with those eco-feminist historians of science who have argued that Francis Bacon initiated a gendered language and exploitation of nature.⁵³

While some recent scholarship on women and science still engages with the early works by Carolyn Merchant and Evelyn Fox Keller, most work on women in science produced over the last decade has shown such theories to be anachronistic. For example, Sarah Hutton and Margaret Osler have exposed how Merchant and Keller have misread the Latin and the emblems in Bacon's works, and they have convincingly argued that such early feminist critiques of nature relied on assumptions of women's gendered subjectivity that did not yet exist in the seventeenth century.⁵⁴

Pursuing the goal of uncovering Lady Ranelagh's material practice, the section on medicine (Chapters 2 and 3) will analyse her letters, individual recipes and receipt books to determine what type of medicine she knew, used and endorsed. The seventeenth century was a time of competing medical systems, as the old Galenic model was slowly being replaced by developments in chemical medicine, or iatrochemistry. The extent to which these changes were implemented in domestic practice — and specifically in

⁵³ Evelyn Fox Keller, *Reflections on Gender and Science* (New Haven, CT: Yale University Press, 1985) and Carolyn Merchant, *The Death of Nature: Women, Ecology and the Scientific Revolution* (San Francisco: Harper & Row, 1980).

⁵⁴ Sarah Hutton, 'The Riddle of the Sphinx: Francis Bacon and the Emblems of Science' in *Women, Science and Medicine*, pp. 7-28, and see Margaret J. Osler, 'The Gender of Nature and the Nature of Gender in Early Modern Natural Philosophy' in *Men, Women, and the Birthing of Modern Science*, pp. 71-85.

women's domestic medical practice — has triggered some scholarly debate.⁵⁵ These two chapters engage with recent discussions of domestic medical practice, such as those presented by Andrew Wear, to explore how information circulated between lay practitioners and physicians; they emphasise the importance of self-treatment and local medical authorities.⁵⁶ In this sense, I have been influenced by the growing interest over the past few decades in the social history of medicine, addressing topics such as elite vs. popular knowledge and practice, how practitioners constructed medical authority, and the transmission of knowledge in patient/practitioner relationships.

Recent research on receipt books has contributed significantly to our understanding of how medical knowledge circulated in early modern England, and these studies have been essential to this analysis of Lady Ranelagh's manuscripts. Jennifer Stine was the first to use these sources to argue that medical knowledge travelled freely between individuals of very different social standing, for a physician's name could appear on the same page as a 'goody wife'.⁵⁷ Later studies, such as those by Elaine Leong, have analysed the processes and ingredients mentioned in receipt books to gain a clearer understanding of how domestic medicine differed from and overlapped with professional medicine, as used and prescribed by physicians.⁵⁸ These studies have convincingly argued that divisions in knowledge were less rigid than was once thought, and that receipt books remain an under-used source in the history of medicine.

⁵⁵ Andrew Wear, *Knowledge and Practice in English Medicine, 1550-1680* (Cambridge: Cambridge University Press, 2000); Elaine Leong, 'Making Medicines in the Early Modern Household', *Bulletin for the History of Medicine*, 82 (2008), 145-68.

⁵⁶ Andrew Wear, *Knowledge and Practice*; Andrew Wear, 'The Popularisation of Medicine in Early Modern England' in *The Popularisation of Medicine 1650-1850*, ed. by Roy Porter (London: Routledge, 1992), pp. 17-41.

⁵⁷ Stine, 'Opening Closets'.

⁵⁸ Elaine Leong, 'Making Medicines'; Elaine Leong, 'Medical Recipe Collections in Seventeenth-Century England: Knowledge, Text and Gender' (unpublished doctoral thesis, University of Oxford, 2005).

Within both halves of the thesis, I incorporate literary criticism into my studies of history of science and medicine, bringing an interdisciplinary approach to Lady Ranelagh's manuscripts. For example, I consider the genre and intended audience (private or public) of a document to be just as important as other historical indicators, such as the date of composition or the social context in which it was written. The range in types of manuscripts — letters, treatises, and receipt books — and the nature of different intended audiences — from scribal publication in the Hartlib Circle to letters using cipher written to her brother the Earl of Burlington — means that each chapter employs a slightly different approach, that best suited to the format of the manuscripts.

Chapter Overview

The thesis begins by offering a biography of Lady Ranelagh, pieced together primarily from her extant manuscripts. When possible, her own words are used to offer a more intimate view of her thoughts on various subjects. Chapter 1 begins with a discussion of her birth in Ireland in 1615, her childhood education, and her early marriage, paving the way for a more detailed examination of her adult life in England from 1642 until her death in 1691. The main objective is to outline her intellectual, religious and political mindset, and to explore how her ideas and opinions changed over the course of her life. By recreating her life, biographical details may then be drawn upon in later chapters to assess the extent to which her actions and opinions were shaped by her life circumstances and personality rather than culture. In addition to introducing her very diverse social network, this section highlights the role of religion, in particular her belief

in providence, in her wider political and intellectual ambitions — a recurring theme in later chapters.

The section on natural philosophy follows this foundational chapter, with Chapter 2 considering Lady Ranelagh's involvement in the Hartlib Circle from circa 1642 to 1660. A search through the Hartlib Papers archive reveals that Lady Ranelagh was a central figure in the Hartlib Circle and contributed to a range of natural philosophical topics including chymistry, optics, mathematics, and horticulture. Her letters were often annotated, copied, translated, and circulated to an international group of correspondents, demonstrating how other members of the circle valued her intellectual contribution. The archive offers some of the clearest evidence of the range and depth of her natural philosophic knowledge, and the respect she commanded from leading authorities on the subject.

Chapter 3 reconsiders these new archival finds in the Hartlib Papers by placing them within a gendered historiography of science that spans Lady Ranelagh's adult life. I consider how typical such knowledge of natural philosophy was for a gentlewoman, and how her pious reputation and use of scribal rather than print publication enabled her to maintain the respect of influential male scholars. I then juxtapose the abundant evidence of her scientific practice during the Civil Wars and Interregnum with the lack of references to natural philosophy in her letters written after the Restoration. This section considers the possible reasons for her diminished interest in natural philosophy in the later years of her life, addressing issues such as the foundation of the male-only Royal Society, unreliable archival records, and the changing political and religious climate.

The thesis then moves into a discussion of medicine, with the following two chapters divided by genre instead of time-period to allow an analysis of how medical authority and networks may have been presented differently in receipt books and letters. Chapter 4 begins this section with a detailed analysis of the three manuscript receipt books associated with Lady Ranelagh, aiming to clarify her actual relationship to these texts. Each text is treated individually, with the binding, handwriting, presentation, and provenance all examined for clues to her contribution to the compilation of each manuscript. I will argue that none of these manuscripts is actually in her hand, and then consider how each text can nonetheless be read to yield information about Lady Ranelagh's medical knowledge and networks.

Chapter 5 considers references to medical practice in the corpus of Lady Ranelagh's extant letters. The main goals are to identify with whom she exchanged medical recipes and advice and to determine what type of medicine she practised and endorsed. This section considers recipes circulated in letters to other members of the Hartlib Circle, as well as private letters to family members, to consider how audience may have shaped her presentation of medical authority. I also compare the diverse community evidenced by her receipt books with the more selective medical circle presented in her letters to argue that generic conventions may distort our analysis of how medical knowledge circulated.

Overall, the thesis draws on substantial new archival research to begin reconstructing the life of one of the most important intellectual women in seventeenth-century England. Lady Ranelagh practised several branches of natural philosophy and many types of medicine, and her opinion was sought and respected by physicians,

Fellows of the Royal Society, Members of Parliament, and religious leaders. When we consider the scope of her interests, the diversity of her intellectual network and the high esteem in which contemporaries held her, Lady Ranelagh emerges as an exceptional woman in a class of her own. Recovering her life and work offers a corrective to our understanding of women's involvement in the intellectual climate of the seventeenth century, and reminds us that some of the most influential women of the past may have been lost to us because they used only ephemeral modes of communication, such as oral discussion, domestic papers, and letters. Alongside recent studies of Lady Margaret Cavendish and Lady Anne Conway, this thesis hopes to secure Lady Ranelagh a firm place within the intellectual history of the period.⁵⁹

⁵⁹ Stephen Clucas, ed., *A Princely Brave Woman*; Sarah Hutton, *Anne Conway: A Woman Philosopher* (Cambridge: Cambridge University Press, 2004).

Chapter 1: The Life of Katherine Jones,

Lady Ranelagh (1615-1691)

It is not difficult to find praise of Lady Ranelagh in the letters and diaries of those who knew her, as her contemporaries frequently commented on her exceptional wit and piety. The diarist and virtuoso John Evelyn referred to her as ‘a person of extraordinary talent’.¹ The radical poet John Milton called her ‘that most exemplary woman’.² To Henry Oldenburg, Secretary of the Royal Society, she was ‘that very noble and pious Lady Ranelagh’.³ These brief comments make it clear that she was associated with some of the most influential men in seventeenth-century England and they leave to posterity a hint of the admiration her friends and correspondents had for her. Ultimately, such quotations tantalise modern historians, leaving us to wonder about this woman who is as obscure to us as she was known and respected by her contemporaries. Apart from an out-dated article by Kathleen Lynch and a brief account by Sarah Hutton, no biography of

¹ BL Add. MS 4229, fol. 58. Letter, John Evelyn to William Wotton, 29 March 1696. Cited in Elizabeth Anne Taylor, ‘Writing Women, Honour, and Ireland: 1640-1715’, 3 vols (unpublished doctoral thesis, University College Dublin, 1999), II, p. 295. John Evelyn (1620-1706) had an interest in educational reform, gardening, and various branches of natural philosophy, which brought him in touch with the Hartlib Circle. At the Restoration, he was a Founder Fellow of the Royal Society and printed several books on various intellectual and theological subjects. See Gillian Darley, *John Evelyn: Living for Ingenuity* (New Haven, CT: Yale University Press, 2007).

² John Milton, *Epistolarum Familiarium Liber Unus* (London, 1674). I quote from the translation from the Latin in Kathleen M. Lynch, ‘The Incomparable Lady Ranelagh’, in *Of Books and Humankind: Essays and Poems Presented to Bonamy Dobrée*, ed. by John Butt (London: Routledge, 1964), pp. 25-35 (p. 30).

³ *The Correspondence of Henry Oldenburg*, ed. and trans. by A. Rupert Hall & Marie Boas Hall, 13 vols (Madison: University of Wisconsin Press, 1965-1986), I (1965), p. 125. Letter, Henry Oldenburg to Manasseh ben Isreal, 25 July 1657. Henry Oldenburg (c.1619-1677) was born in Bremen and first visited England in 1653, when he met several important people including Lady Ranelagh, Robert Boyle, and John Milton. He was an active member of the Hartlib Circle and later became the first secretary to the Royal Society. See *ODNB* entry for ‘Henry [Heinrich] Oldenburg (c.1619-1677)’.

Lady Ranelagh has been published.⁴ This chapter collates archival material from holograph manuscripts, letters written to her, and references about her in contemporary diaries and letters to provide an introduction to one of the most important women in early modern history: ‘The Incomparable Lady Ranelagh’.⁵

Childhood and Early Adulthood: 1615-1641

Katherine was the seventh of fifteen children of Richard Boyle (1566-1643) and his second wife, Catherine Fenton (c.1588-c.1630).⁶ By the time of her birth on 22 March 1615 at Youghal in southwest Ireland, her father Richard Boyle had already been steadily climbing the social ladder for nearly two decades, and had secured numerous properties and titles in Ireland. Born and educated in Canterbury, Richard moved to London for a brief period in the mid-1580s to gain some legal experience. In 1588, ‘a penniless but ambitious young man, [he] went to seek his fortune in Ireland’.⁷ As early as 1590, Richard began acquiring Irish properties — mostly in Munster — through governmental positions that he held, and later through his marriage to the heiress Joan Apsley in 1595. Joan Apsley died in childbirth in 1598 during the delivery of a still-born son, and Richard delayed his second marriage until 1603, when he married Catherine Fenton, daughter of Sir Geoffrey Fenton, Principal Secretary to the Lord Deputy of Ireland.

⁴ Kathleen M. Lynch, ‘The Incomparable Lady Ranelagh’, in *Of Books and Humankind: Essays and Poems Presented to Bonamy Dobrée*, ed. by John Butt (London: Routledge, 1964), pp. 25-35. Sarah Hutton wrote the *ODNB* entry ‘Katherine Jones, Viscountess Ranelagh (1615-1691)’. More recently, there have been some unpublished biographical accounts in doctoral theses, most notably Elizabeth Anne Taylor, ‘Writing Women, Honour, and Ireland’, II, Ch. 4. See above ‘Introduction’ for a more comprehensive literature review on biographical accounts of Lady Ranelagh.

⁵ This term was used frequently by contemporaries. See Lynch, ‘The Incomparable Lady Ranelagh’.

⁶ For a genealogy of the Boyle family, see Appendix A-1.

⁷ Nicholas Canny, *The Upstart Earl: A Study of the Social and Mental World of Richard Boyle, First Earl of Cork 1566-1643* (Cambridge: Cambridge University Press, 1982), p. 5. The remainder of Richard Boyle’s biography is summarised from this book unless noted otherwise.

He was created Lord Boyle, baron of Yougal, in May 1616 and Earl of Cork in October 1620. By 1640, Cork had acquired so much land in Ireland that he was one of the wealthiest noblemen in both Ireland and England.

Many details of Cork's life and those of his children may be gleaned from his autobiographical treatise *True Remembrances* and from his diaries.⁸ One undated entry in the *True Remembrances* lists a short passage about each of his children, and Katherine is introduced as follows:

My daughter Katheryne Boyle was born in the colledg hows of yoghall, vpon wednesdaie, being the xxiith daie of Marche 1614 : Sir Richard Bolton of Curduff being her godfather, and my sister in Law the Lady Margaret ffenton, and the Lady Harris, being her godmothers. The young Lo Beaumont was born the xth of Maie 1614. She was married in Dublin to Mr Anthony [sic] Jones onely son to the Lo viscount Rannelagh 4 April 1630.⁹

This passage is similar to Cork's other notes about his children, as he was careful always to state the date of birth and the godparents, as well as the future titles his children would hold. In the case of his daughters, their marriages (and, as seen in this reference to Katherine, even potential marriages) are detailed, along with any titles held by the husband. The Earl of Cork was involved heavily in all of his children's lives, providing educational and political opportunities for his sons and trying to secure for his daughters advantageous marriages to Irish and English nobility.

The level of education that Katherine received is uncertain, and historians have offered varying hypotheses on how the Boyle girls were educated. Nicholas Canny

⁸ Many historians have found Cork's *True Remembrances* to be a more reliable map of the myth Cork created about himself than an accurate resource for biographical documentation, which has contributed to its neglect. Though selections of Cork's autobiographical manuscripts were printed by Thomas Birch in 1744, and a more complete edition was printed by Alexander Grosart in 1886, it was not until Canny's 1982 *Upstart Earl* that these documents received properly scholarly attention.

⁹ See *The Lismore Papers, First Series: Autobiographical Notes, Remembrances and Diaries of Sir Richard Boyle, First and 'Great' Earl of Cork*, ed. by Rev. Alexander B. Grosart, 2 series, 10 vols (London, Chiswick Press: 1886), II, pp. 109-110.

argues that ‘from what can be gleaned from the sources it would seem that Cork provided no formal education for his daughters beyond that which they obtained from his chaplains who doubled as tutors’.¹⁰ As Sara Heller Mendelson explains, the boys ‘received expensive educations, including Eton and a continental tour to perfect their Latin, French, rhetoric, logic, mathematics, geometry and other subjects. For the earl’s daughters, however, the “foundations of religion and civility” were deemed a sufficient preparation for life’.¹¹ Margaret MacCurtain suggests that, ‘the education of the Boyle children followed a pattern: wet nursing and fosterage, private tutoring at home under their father’s eye’.¹² Though MacCurtain does not distinguish between the genders of the children in this quotation, she is careful to consider this in the article as a whole, and it should be stressed here that Cork did not hire private tutors for his daughters as he did for his sons. It appears that while tutoring at home might have been the main source of education for the Boyle boys, the foster families were probably the most important factor in the education received by the Boyle girls, possibly explaining why there is a disparate gap in acquired knowledge when considering different Boyle girls in their early adulthood.

There is no indication as to the level of education that was offered specifically to Katherine, but two extremes may be presented through the examples of her sisters. Nicholas Canny has argued that her elder sister Lettice had a ‘minimal level of literacy’ at the time of marriage and had possibly only been exposed to religious texts, but by

¹⁰ Canny, *Upstart Earl*, pp. 86-87.

¹¹ Sara Heller Mendelson, *The Mental Word of Stuart Women: Three Studies* (Amherst: University of Massachusetts Press, 1987), p. 65.

¹² Margaret MacCurtain, ‘Women, Education and Learning in Early Modern Ireland’, in *Women in Early Modern Ireland*, ed. by Margaret MacCurtain and Mary O’Dowd (Dublin: Wolfhound Press, 1991), pp. 160-78 (p. 172).

contrast, her younger sister Mary received Philip Sidney's *Arcadia* as a gift from Cork when she was only ten years old.¹³ At the age of three, Mary was sent to the home of Sir Randall and Lady Cleyton, where she spent ten years and received a basic education that enabled her to read and write in English and French.¹⁴ If Katherine followed the family tradition, she probably spent her first couple of years in the care of a wet nurse and then may have been sent to a foster home. However, there is no documentation of her leaving home until she was contracted to marriage at 9 ½ years old, leaving later generations to wonder whether she followed this traditional family path or remained at home and gained access to additional education through her brothers' tutors.

In September 1624, Katherine left her family at 9 ½ years old when she moved to Leicestershire to live with the family of Sapcott Beaumont, whom she was contracted to marry. Katherine's mother claimed descent from the Beaumonts and encouraged the marriage, and Cork appears to have agreed to the union partly because he was pressured by the Fenton family, but also because it promised a fruitful political alliance: Sapcott was the son of Thomas Beaumont, a kinsman to the first Duke of Buckingham. Cork had begun negotiating this marriage when Katherine was only 8 years old, and in 1622 he agreed to pay in advance £3,522 of her £4,000 dowry. From 1624 to 1628, Katherine lived in the care of the Beaumont family at Cole-Orton in Leicestershire, during which time she may have received a Bible with a dedication poem written by Thomas Pestell (c.1584-1659), a poet and clergyman who was a friend of the Beaumont family.¹⁵ She

¹³ Canny, *Upstart Earl*, p. 87.

¹⁴ The Cleytons were tenants of the Earl of Cork, living on a farm near Cork, and excelled as surrogate parents. They had also helped raise Mary's older sister Alice and would later take into their care her younger sister Margaret. See Mendelson, *Mental World*, pp. 65-66.

¹⁵ Andrew Carpenter has found a Bible that begins with a handwritten poem dedicated to a 'Lady K C' which includes puns on the name Katherine. He has identified a connection between the Beaumont family and Thomas Pestell at the time when Katherine was living there, and has suggested that the 'Lady K C'

may have also come into contact with Stephen Jerome, who worked in both the Cork and Beaumont households and preached on the unity of Protestant churches — a philosophy she would come to endorse in her adult years.¹⁶ The marriage alliance was broken when Thomas Beaumont died and the family demanded an additional £2,000 for her dowry. Katherine returned to Ireland, but Cork was unable to recover all of his pre-payment of the dowry.¹⁷ Little is known about the years she spent in the Beaumont household, though Cork claims that Katherine “lost the foundations of religion and civility” in which she had been “first educated” during her early childhood years in Ireland.¹⁸ It is possible that Katherine received further education during her four years in their care.

Katherine returned to Cork’s household in 1628, where she probably remained for two years. In April 1630, Katherine, now aged 15, married Arthur Jones (d. 1670), heir to the first Viscount Ranelagh, with a dowry of £4,000.¹⁹ The event was captured in Cork’s *True Remembrances* as follows:

The marriadg of my daughter Katheryne to Arthure Jones.—
 My ffifte daughter Katheryne Boyle, was married to Arthure Jones the
 onely son of the Lo viscount Rannelagh by Mr Cullam dean of St Patricks,
 on Sonday in thevening (in the howse I fearmed of the lo Calfeild in Dublin)
 the ffowrth daie of Apprill 1630; god bless them with a lardg & virtuous
 posteretic.²⁰

may be ‘Lady K[atherine] C[ork]’. See Andrew Carpenter, *Verse in English from Tudor and Stuart Ireland* (Cork: Cork University Press, 2003), pp. 154-55. For more on Thomas Pestell at Cole Orton during the late 1620s and his relationship with Beaumont, see Christopher Haigh, ‘The Troubles of Thomas Pestell: Parish Squabbles and Ecclesiastical Politics in Caroline England’, *Journal of British Studies*, 41 (2002), 403-28. However, convention dictates that she would have been addressed as Lady Katherine Boyle, making this link less probable.

¹⁶ Ruth Connolly, “‘A Wise and Godly Sybilla’: Viscountess Ranelagh and the Politics of International Protestantism’, in *Women, Gender and Radical Religion in Early Modern Europe*, ed. by Sylvia Brown (Leiden: Brill, 2007), pp. 285-306 (pp. 286-87).

¹⁷ Taylor, ‘Writing Women’, II, p. 282.

¹⁸ Taylor, ‘Writing Women’, II, pp. 282-83.

¹⁹ *ODNB* entry for ‘Katherine Jones, Viscountess Ranelagh (1615-1691)’.

²⁰ Grosart, *Lismore Papers, First Series*, II, p. 114.

The two produced four children within the first ten years of the marriage. Her eldest daughter, Catherine, was born at Athlone Castle on 23 December 1633.²¹ Her second daughter, Elizabeth, was possibly born in 1635.²² Her youngest daughter, and the one with whom she appears to have been closest, was Frances, born at Stalbridge in England on 17 August 1639.²³ Her only son, Richard Jones, was born on 8 February 1641 in the London home of his uncle, Richard Boyle, the future second Earl of Cork.²⁴

The marriage was not a happy one. Sarah Hutton appropriately summarises their marital problems by saying that ‘Her husband had a reputation for boorishness, even at the time of their marriage’.²⁵ In an undated letter from Sir John Leeke to Sir Edmund Verney, Leeke says, ‘my pretious Katherine is somewhat decayed from the sweetest face I ever saw (and surely I have seene good ones). She is keapte and longe hath bine by the foulest Churle in the world; he hath only one vertu that he seldom cometh sober to bedd, a true imitation of Sir Rob^t Wroth’.²⁶ An early letter that Katherine wrote from London to her father on 13 October 1640 offers a glimpse into this unhappy union:

²¹ Catherine married first Sir William Parsons (d. 1658), and then, in 1660, Hugh Montgomery, first Earl of Mount-Alexander (c.1626-1663). She died in 1675.

²² Taylor, ‘Writing Women’, II, pp. 285-86. Elizabeth caused a family scandal by marrying a footman.

²³ Frances, often called ‘Frank’ in the family letters, never married and lived in her mother’s home until her death in 1672. She appears to have met some of Lady Ranelagh’s intellectual friends, as there are letters passed between her and Henry Oldenburg, and Andrew Marvell wrote her epitaph. Frances and Oldenburg wrote letters to each other in August 1659, and Oldenburg makes an affectionate reference to her in a letter to Lady Shannon, written 5 Feb 1661. See *Correspondence of Oldenburg*, pp. 305 & 408. Her death and Marvell’s epitaph will be discussed later in this chapter.

²⁴ See *ODNB* entry for ‘Richard Jones, Earl of Ranelagh (1641-1712)’. Richard married Elizabeth Willoughby (d. 1695) in 1662, who would remain intimate with her mother-in-law throughout her life. After Elizabeth’s death, he married Margaret Stawell (née Cecil) in 1696. Though his mother secured him the best tutors and tried to foster in him a dedication to religion, Richard embezzled funds and was said to have died without religion. He is best remembered as the founder of Ranelagh Gardens in Chelsea.

²⁵ *ODNB* entry for ‘Katherine Jones, Viscountess Ranelagh (1615-1691)’.

²⁶ Quoted in *Memoirs of the Verney Family*, ed. by Frances Parthenope Verney, 4 vols (London: Longmans, 1892), I, p. 206. Sir Robert Wroth (c. 1576-1614) married Mary Sidney in 1604, the latter best known today as the poet Mary Wroth (c.1587-c.1653). The marriage was an unhappy one, evidenced by numerous comments from contemporaries, including Ben Jonson. John Leeke was a confidant of Mary Wroth, and in 1640 he wrote to Sir Edmund Verney to say he had received a letter from her, calling her his ‘owld mistress, the Lady Mary Wroth’. See *ODNB* entry for ‘Lady Mary Wroth (nee Sidney) (1587?-1651/1653)’.

Mr Joneses silence proceeds from his not living here, for having nothing to doe, he made a Journey to Oxford, to satisfie himselfe in the observation of yt Place, from whence he is not yet returned. I stood by when he read yr Lo^{ps} letter, & heard him Confes himselfe guilty of play to a degree yt made him neede yr Lo^{ps} advice²⁷

The letter continues with Katherine quoting Arthur as saying that his brother-in-law, George Goring (married to Katherine's older sister Lettice, Lady Goring), 'is at least as faulty'.²⁸ She then concludes with a tantalising reference to Arthur reading a part of Cork's letter that he did not understand, though Katherine might have: 'He sayd further there was one part of yr letter he understood not, If I did, I desier yt sting may be noe more touched'. Elizabeth Anne Taylor reads this line as Arthur feigning confusion as to Cork's meaning, though Katherine understood, using the word 'sting' as a metaphor for her husband's infidelity.²⁹

Despite their difficult relationship, Katherine and Arthur appear to have tried working at the marriage for the first decade. During the period 1631-41, the two frequently travelled between Ireland and England, though not always together, and had four children. Little is known about their exact activities during these years, or their length of stay in either country, but some information may be pieced together. In 1631, Katherine accompanied her husband to London, which may have been her first trip to the vibrant city. It is unknown how long they stayed, but by December 1633 she was back in Ireland giving birth to her first child. Nothing is known about where or how Katherine spent the mid-1630s, but a letter from Sir John Leeke to his friend Sir Edmund Verney

²⁷ Letter, Lady Katherine Jones to the Earl of Cork, 13 October 1640. Chatsworth House, Cork MSS, Box 21, Letter 61.

²⁸ George Goring (1608-1657) married Lettice on 25 July 1629. Cork had negotiated an exorbitant dowry of £10,000, which prompted the young George to spend extravagantly, eventually depleting their funds by 1633. George was a reckless gambler throughout his life and their marriage was notoriously unhappy. He joined the Royalist army and eventually died in exile in Spain.

²⁹ Taylor, 'Writing Women', II, p. 285

suggests that the two may have been considering moving to London. Leeke wrote of Katherine, probably in 1635, ‘a more brayve wench or a Braver spirit you have not often mett wth all. She hath a memory that will hear a sermon and goe home and penn itt after dinner verbatim. I know not how she will appeare in England, but she is most accounted of att Dublin. I am much obliged to hir’.³⁰ This quotation is important not only for locating her geographically, but also because it indicates that her remarkable intelligence had already been noticed by others. In 1638 Katherine returned again to England to join her husband, and they lived together for approximately two and a half years.³¹ Her time in England appears to have been split between various locations in London and the family estate in Stalbridge, Dorset.³² She was in London in October 1639 when her brother Francis married Lady Elizabeth Killigrew, one of Queen Henrietta Maria’s Maids of Honour. The royal family hosted a lavish celebration, and Katherine was one of three of Cork’s daughters who sat with him at the royal table ‘amongst all the great Lords and Ladies’.³³

During her frequent trips to England in the 1630s, Katherine probably found time to visit her childhood friend from Ireland, Lucius Cary, 2nd Viscount Falkland (1610-1643).³⁴ She first met Lucius Cary, son of the lord deputy, Sir Henry Cary, in 1624 in

³⁰ Quoted in *Memoirs of the Verney Family*, I, pp. 203-204.

³¹ Taylor, ‘Writing Women’, I, p. 288.

³² This is based on the places of her children’s births. Also, Kathleen M. Lynch mentions that Katherine spent the winter of 1638 in London at Savoy Palace, which Sir Thomas Stafford had loaned to the Earl of Cork. See Lynch, ‘The Incomparable Lady Ranelagh’, p. 26.

³³ Lynch, ‘The Incomparable Lady Ranelagh’, p. 27; Canny, *Upstart Earl*, pp. 56-57.

³⁴ Lucius Cary was the son of Henry Cary, first Viscount Falkland, who was appointed Lord Deputy of Ireland when Lucius was twelve years old. He settled at his estate at Great Tew around 1632 and spent the rest of the decade hosting intellectual meetings of friends. In 1640, Falkland became a Member of Parliament and was vocal with his criticism of Laudianism and the King’s advisors, and he supported the execution of Strafford in May 1641. He was a moderate Royalist and was killed in action fighting for the king. Further information about the relationship between him and Lady Ranelagh, and about The Great Tew Circle, may be found in Hugh Trevor-Roper, *Catholics, Anglicans and Puritans: Seventeenth Century*

Ireland and the two remained in contact thereafter. During the 1630s, Falkland hosted meetings in his Oxfordshire estate for a group of learned young men in what came to be known as the Great Tew Circle. Regular members who resided with Falkland were Edward Hyde³⁵ and the philosopher William Chillingworth;³⁶ other visitors included Gilbert Sheldon, future Archbishop of Canterbury (1598-1677), the philosopher Thomas Hobbes (1588-1679), and the Church of England clergyman Henry Hammond (1605-1660), among many others.³⁷ It is unknown when Katherine visited Great Tew, but she was associated with the Circle through her friendships with Falkland and Hyde, which she maintained until their deaths. From July to November 1642, when Katherine was trapped in Athlone Castle in Ireland and Falkland was fighting for the Royalist army, he wrote to her sister-in-law Elizabeth Clifford, then Lady Dungarvan, for updates on ‘my Lady Katherines health (a neues which would alone much enable mee to beare the other Troubles of the Time)’.³⁸ After Falkland’s death in 1643, Sir Peter Pett proposed to write

Essays (London: Secker & Warburg, 1987), pp. 166-230. See also ‘Lucius Cary, second Viscount Falkland (1609/10-1643)’ in the *ODNB*.

³⁵ Edward Hyde (1609-1674) was the closest friend of Viscount Falkland, whom Hyde affectionately praises in his posthumously published books *The Life of Edward, earl of Clarendon*, 3 vols (Oxford: 1759) and *The History of the Rebellion and Civil Wars in England*, 3 vols. (Oxford: 1702-04). Hyde was a loyal supporter of the King throughout the civil war and Charles trusted him as a valuable advisor. After the war, Hyde resided in various countries on the continent, only returning after the restoration of the monarchy. He served as Lord Chancellor (an appointment he gained in January 1658) to Charles II and became the first Earl of Clarendon in 1661. Clarendon was impeached in 1667 and lived the rest of his life in exile in France, where he died in December 1674. See *ODNB* entry for ‘Edward Hyde, first Earl of Clarendon (1609-1674)’.

³⁶ William Chillingworth (1602-1644) was an Oxford-educated theologian and philosopher. He wrote his major theological work *The Religion of Protestants a Safe Way to Salvation* (1638) while at Great Tew. He remained a Royalist throughout his life and published anonymous pamphlets to defend the Royalist cause. See entry for ‘William Chillingworth (1602-1644)’ in the *ODNB*.

³⁷ Since the Great Tew estate was isolated in the country, visitors would stay for various lengths of time. According to Clarendon, eminent intellectuals from Oxford and London ‘found their lodgings there, as ready as in the colleges, nor did the lord of the house know of their coming or going, nor who were in his house, till he came to dinner or supper, where all still met’. See Trevor-Roper, *Catholics, Anglicans and Puritans*, p. 168.

³⁸ BL Add. MS 75356, unpaginated. Letter, Lord Falkland to Lady Dungarvan, 20 August [1642]. The other letters from Lord Falkland to Lady Dungarvan that make reference to Lady Ranelagh are also in this collection.

a biography of this central member of the Great Tew Circle, and named Lady Ranelagh as a friend from whom he would gather biographical details.³⁹

Katherine returned to Ireland in 1641, just before the Irish Uprising, where she and her four children were trapped in Athlone Castle for many months.⁴⁰ The circumstances of her captivity are unknown, and a letter she wrote to her father in 1642 which relates the details of her escape has gone missing since Kathleen M. Lynch first quoted from it in 1964.⁴¹ According to Lynch, Katherine ‘accepted a promise of safe conduct, faithfully carried out, from one of the rebel leaders’.⁴² The horrible experience made her decide to leave ‘this bleeding & well neare ruined Commonwealth’.⁴³ She escaped to England in late 1642, and lived apart from her husband, who had become a Captain in the Parliamentary army.⁴⁴ At 27 years old, with four children in tow,

³⁹ *The Genuine Remains of that Learned Prelate Dr. Thomas Barlow* (London: Dunton, 1693), pp. 324-32. The introduction to a letter by Barlow, Bishop of Lincoln, to Sir Peter Pett explains that Pett was collecting the writings of Falkland so that he could publish a folio of his works. In addition to the materials, Pett was ‘supplied in Discourse, from the Lord Chief Justice Vaughan, Mr. Robert Boyle, and the Lady Ranelagh his Sister; and Mr. Abraham Cowly and Mr. Edmund Waller; who all had the Honour of his Friendship and frequent Conversation’ (p. 324).

⁴⁰ Lynch, ‘The Incomparable Lady Ranelagh’, pp. 27 & 32. For more on the Irish Rebellion, see the many excellent essays in *Ulster 1641: Aspects of the Rising*, ed. Brian Mac Cuarta S J (Belfast: Institute of Irish Studies, The Queen’s University of Belfast, 1993) and see Michael Perceval-Maxwell, *The Outbreak of the Irish Rebellion of 1641* (Dublin: McGill-Queen’s University Press, 1994). For a discussion on gender and the Irish Rebellion, see Mary O’Dowd, ‘Women and War in Ireland in the 1640s’ in *Women in Early Modern Ireland*, ed. by Margaret MacCurtain and Mary O’Dowd (Dublin: Wolfhound Press, 1991), pp. 91-111.

⁴¹ In her article ‘The Incomparable Lady Ranelagh’, Lynch says, ‘This letter found a casual resting place on a dusty shelf in the Public Record Office in Dublin, in a heap of unsorted, loosely strewn papers from the cupboards of Lismore Castle. It is one of a small number of family letters, scattered on that shelf, which must have reached the ageing Earl of Cork too late to be included in the precious red box of writings which he hurriedly shipped to England at the outbreak of the Irish Rebellion’ (p. 32). Since then, many scholars have tried to locate this letter, but it appears to have gone missing again. Lynch has a further reference to this letter in her book *Roger Boyle, First Earl of Orrery* (Knoxville: The University of Tennessee Press, 1965), pp. 45-46.

⁴² Quoted in Lynch, ‘The Incomparable Lady Ranelagh’, p. 27. In *Roger Boyle*, Lynch identifies the rebel commander as Sir James Dillon (p. 46).

⁴³ Lynch, ‘The Incomparable Lady Ranelagh’, p. 32.

⁴⁴ See *ODNB* entry for ‘Katherine Jones, Viscountess Ranelagh (1615-1691)’ and see Taylor, ‘Writing Women’, II, p. 302. G.E.C’s *Complete Peerage* states that Viscount Ranelagh was ‘one of the Captains in the army of the Commonwealth, having declared for the Parl[iament] in Mar[ch] 1642’. See G.E.C’s *Complete Peerage*, X (1945), pp. 731-32.

Katherine moved to London and created for herself a new world filled with intellectual, spiritual and political opportunities.

Independent Life in England: 1642-1660

After having suffered in the Irish Rebellion, Katherine then had the misfortune of arriving in England at the outbreak of the English Civil War. She resided first on Queen Street near St. Paul's Cathedral, with her home serving as a place of refuge for displaced family members. Her sisters Lady Joan Kildare (1611-1656) and Lady Dorothy Loftus (1617-1668) had already moved with their children to London earlier that year, as both of their homes had been possessed by Irish rebels.⁴⁵ After her sister Lady Alice Barrymore was left a widow in September 1642, Lady Barrymore and her children moved into Katherine's London home.⁴⁶ Katherine's sister-in-law Lady Margaret Clotworthy also joined her a little later, perhaps pushing Katherine's sympathies further towards Parliament and the Puritan cause.⁴⁷ Margaret was a Presbyterian who had been imprisoned by Thomas Wentworth, Earl of Strafford, for her religious beliefs.⁴⁸ She

⁴⁵ See Chatsworth House, Box 22, Letter 146. Letter from Lady Kildare to Earl of Cork, 8 Feb. 1642. Also see Appendix A-1, Boyle Family Genealogy.

⁴⁶ It is unknown how long Alice resided here, but presumably for a maximum of two years, as she remarried about two years later. Her first husband, David Barry, was a Royalist active in protecting English interests in Ireland. He died in September 1642 at age 38 in the battle of Liscarrol. Her second husband was John Barry, younger brother of her first husband. Alice died on 23 March 1666; she is the 'Mrs Barry' buried at St. Patrick's in Dublin. G.E.C.'s *Complete Peerage*, I (1910), p. 443.

⁴⁷ *ODNB* entry for 'Katherine Jones, Viscountess Ranelagh (1615-1691)'. Margaret (fl. 1638-1683) was the elder sister of Arthur Jones and married John Clotworthy, later 1st Viscount Massereene (d. 1665) sometime before 1643. Their only child, Mary, married Sir John Skeffington, to whom the Massereene title passed upon John's death in 1665. See *ODNB* entry for 'John Clotworthy, first Viscount Massereene (d. 1665)'.

⁴⁸ Thomas Wentworth (1593-1641) became Lord Deputy of Ireland in 1631, and shortly after this appointment a feud began between him and the Earl of Cork which would last for the next decade. In the late 1630s, he became increasingly important to Charles I, who offered him several promotions and titles in quick succession, and by then was the king's chief councillor. He became the main target of Parliament and executed in 1641. See *ODNB* entry for 'Thomas Wentworth, first Earl of Strafford (1593-1641)'. For more on the feud between Wentworth and Cork, see Patrick Little, 'The Earl of Cork and the Fall of Strafford, 1638-41', *Historical Journal*, 39 (1996), 619-35, and Canny, *The Upstart Earl*.

married a fellow Presbyterian, John Clotworthy — a union that confirmed John's place among the New English who opposed Wentworth.

In 1644, Robert Boyle returned from his Grand Tour of the continent and sought his sister Katherine, who had gained the title Lady Ranelagh the previous year and whom he had heard was residing in London.⁴⁹ Robert stayed in her house for four and a half months on this initial visit, and he would return later in 1668, when he would share Lady Ranelagh's home until the end of his life. In an autobiographical fragment written by Robert Boyle in the third person, he highlights two key reasons, religious and political, why these first months living with his sister were important to him. First, he was persuaded not to join the Royalist army or the Court, where he fears he might have become morally corrupt. Second, in his own words, he was able to 'grow acquainted with several Persons of power & interest in ye Parliamt and their party, which being then very great & afterwards the prevailing One, prov'd of good use, & advantage to him, in reference to his Estate and concerns both in England and Ireland'.⁵⁰ By 1644, only two years after having moved to London, Lady Ranelagh was already well integrated into Parliamentary politics and was associated with and respected by many influential men of her day. This may have been partly thanks to living with her sister-in-law Lady Clotworthy, whose husband John became an influential Member of Parliament in 1640.

Throughout the civil wars, Lady Ranelagh was politically active, trying to promote peace by writing persuasive letters to friends who held powerful positions on

⁴⁹ She became Viscountess Ranelagh in 1643 when her husband Arthur succeeded to the title, as 2nd Viscount of Ranelagh after the death of his father, Roger Jones. Though she would technically be called 'Viscountess Ranelagh', I will continue to refer to her as Lady Ranelagh, as this was the title most often used by her contemporaries.

⁵⁰ BL Sloane MS 4229, fol. 68r. These Parliamentary figures are not named, except for Lady Ranelagh's sister-in-law, Lady Margaret Clotworthy. The Clotworthy's were Presbyterians active in political and religious reformation in Ireland. See *ODNB* entry for John Clotworthy. Also see Taylor, 'Writing Women', II, pp. 290-91.

either side of the party line. At the beginning of the first civil war of 1642-46, Lady Ranelagh was sympathetic to Charles and hopeful that he could negotiate an acceptable end to the war. In March 1644, she wrote to her friend Edward Hyde, then an influential political advisor to Charles I and Chancellor of the Exchequer, about this subject. She begins and ends her letter with reference to the memory of their shared friend, ‘that gallant man’ Lord Falkland.⁵¹ She asks Hyde to ‘remember how passionate [Falkland was] for the peace of this kingdome’ and that she ‘can’t but hope you had an agreement with him in those inclinations that carry’d him on soe strongly to endeavour the peace and preservation of his Countrie’. She positions herself as one of ‘those yt wish peace & ye K[ing]s happynes’ and offers some very specific advice on how Charles might be reconciled with Parliament. For example, she suggests that the Royalists should acknowledge the London Parliament, which would calm the fears of the two Houses while reminding them of the king’s authority.⁵² Hyde respected her opinion, saving the letter and endorsing it ‘A very sensible letter from Lady Ranelagh’.

Yet by 1646, after the war had dragged on for another two years, Lady Ranelagh’s sympathy for Charles had weakened considerably. She voiced her disappointment in the King’s actions by writing to another prominent Royalist: Charles’s sister Elizabeth, exiled Queen of Bohemia (1596-1662).⁵³ It is unknown how, or for how long, the two

⁵¹ Letter, Lady Ranelagh to Edward Hyde, 3 March 1644. Bodleian Library, Clarendon MSS, Vol. 23, fols. 113-15.

⁵² The King had called a Parliament to Oxford, where he was present with a large number of peers. The Royalists argued that the MPs and peers who remained in London could no longer be considered a Parliament. For a more detailed, excellent study of Lady Ranelagh’s evolving political opinion over the 1640s and 1650s, see Ruth Connolly, ‘A Proselytising Protestant Commonwealth: The Religious and Political Ideas of Katherine Jones, Viscountess Ranelagh (1614-1691)’, *The Seventeenth Century*, 23 (2008), 244-64.

⁵³ Elizabeth Stuart, later Queen of Bohemia (1596-1662), was the daughter of James I and his wife, Anne of Denmark. She married Frederick V, count palatine of the Rhine, on 14 February 1613, which served as an international symbol of protestant unity. Their reign was short-lived, and the couple fled to The Hague in

women had known each other, but Lady Ranelagh's apology for writing another letter after having 'so lately addressed myself to Your Majesty' shows that they had already been corresponding. She addresses the Queen with a clear demonstration of respect and humility, following all the standard conventions of writing to a social superior, such as using full-size folio paper and leaving significant blank space around the address and signature (conventions not evidenced in most of her extant letters).⁵⁴ Yet the letter is among her most forceful, stating in the first sentence that 'ye affayres of this kingdome are now at a determining point' and appealing to the Queen's 'good nature and christianety'.⁵⁵ The letter, dated 7 August [1646], was written immediately after Parliament had delivered another peace proposal to Charles and he was again stalling in delivering an answer.⁵⁶ Lady Ranelagh explains:

ye Scotch Minesters spoke language playne enough to put him in mind yt he was but a peece of Clay accoumptable for all his actions to yt greate king of kings yt had sett him up, their commissioners presented him wth perswasions upon their knees to grant the desiers & spare ye bloud of ye two kingdoms ye Chancellour speakeing soe moveingly to this purpose yt he made ye Auditors give testimony to his Eloquence with their teares, but his Ma^{tye} was unmoveable⁵⁷

In addition to offering a detailed account of the political situation and an informal update on the royal family, the letter is openly critical of Charles and his unwillingness to compromise with Parliament to secure peace for his nation. She is disappointed that 'he

April 1621, where the two lived in exile. Her husband died in 1632, and Elizabeth remained alone in exile throughout the Thirty Years War. While sometimes critical of her brother's actions, Elizabeth supported Charles until his execution, which she did not take lightly. See *ODNB* entry for 'Princess Elizabeth [Elizabeth Stuart], Queen of Bohemia and Electress Palatine (1596-1662)'.

⁵⁴ See Jonathan Gibson, 'Significant Space in Manuscript Letters', *The Seventeenth Century*, 12 (1997), 1-9.

⁵⁵ Victoria and Albert Museum, National Art Library, Forster MS 454, Letter 74, 40/1, fols. 74-75.

⁵⁶ On 30 July 1646 on neutral grounds at Newcastle, Parliament (led by its forceful Presbyterian contingent) presented Charles I with a settlement. Among other terms in this peace proposal was the establishment of a Presbyterian church in England, abolition of the English episcopacy, and the requirement that for the next twenty years Parliament would take over the king's control over the military. See Mark Kishlansky, *A Monarchy Transformed: Britain 1603-1714* (London: Penguin, 1996).

⁵⁷ V&A NAL, Forster MS 454, Letter 74, 40/1, fols. 74-75.

would rather loose his kingdoms yn give ym away & part with three Crownes yn hurt his Conscience'. The letter does not explicitly ask anything of the Queen — it is presented as a news update; but, by employing subtle hints on religious responsibility, Lady Ranelagh is appealing to the Queen's Christian conscience in the hope that she would help persuade her brother to make concessions. It is unknown how the Queen reacted to this letter, but it does exist in another copy and has been saved among other letters of the Stuart family, suggesting that she took seriously these suggestions.⁵⁸

When compared with Lady Ranelagh's letter to Hyde only two years earlier, this letter delivers a more forceful complaint against Charles, suggesting that she had become more sympathetic to the Parliamentary cause. To Lady Ranelagh, Charles's actions over the past few years had exposed him as one who prioritised his pride over the peace of the nation. Yet one common thread runs between the two letters: the hope for a peaceful negotiation to end the war. As she explained to Hyde in 1644, maintaining the war would only make 'this kingdom be reduced to a poverty'.⁵⁹ Two years later, her letter to the Queen of Bohemia explained that an agreed settlement was essential to 'spare ye bloud of ye two kingdoms'.⁶⁰ The latter letter also includes increasingly providential language, as she explains, 'we Continueing still a people yt wil not accept of ye great blessing, peace, from god unless we may have it upon our owne termes nor thinke any termes reasonable yt wil not alow us a liberty of proceeding in those wickednesses yt have drawne on all those mysteries & wil be still more frutefull In produceing such destructive

⁵⁸ The other copy is National Archives (England), TS 23/1/43, fols. 62-63.

⁵⁹ Letter, Lady Ranelagh to Edward Hyde, 3 March 1644. Bodleian Library, Clarendon State Papers MS, Vol. 23, fols. 113-15.

⁶⁰ V&A NAL, Forster MS 454, Letter 74, 40/1, fols. 74-75.

births'.⁶¹ She argues that God will be angry and deliver even more punishment if the English people — and particularly the King and those associated with him — continue to refuse a peace settlement unless it allows them to continue the same destructive behaviour that initially provoked God's wrath. Her political sympathies were largely shaped by her religious commitment to maintaining the peace of the nation, and during the civil wars this meant aligning her sympathies with the party she deemed most likely to procure peace.

Charles's actions continued to disappoint Lady Ranelagh, and by 1648 she was no longer optimistic that the King could ever heal divisions in the country and restore peace to the three kingdoms. She began advocating that the monarch should be stripped of most powers and that governance should rest with Parliament, the representative of the people. She and Sir Cheney Culpeper entered into a discussion about this, and their letters were copied and circulated among the Hartlib Circle.⁶² Initially, Lady Ranelagh sent to Culpeper, via Hartlib, a list of seven political questions, which included sophisticated legal propositions such as 'Whether upon any Occasion the two Houses have power to make a Law binding to the People without the Royall assent, and wheather they bee to

⁶¹ V&A NAL, Forster MS 454, Letter 74, 40/1, fols. 74-75.

⁶² Sir Cheney Culpeper (1601-1663) was a member of the Hartlib Circle and a patron of Samuel Hartlib. His extant letters evidence an interest in law reform and natural philosophy, particularly chymistry and husbandry. See *ODNB* entry for 'Sir Cheney Culpeper' (bap. 1601-1663) and see Stephen Clucas, 'The correspondence of a seventeenth-century "Chymicall Gentleman": Sir Cheney Culpeper and the Chemical Interests of the Hartlib Circle', *Ambix*, 40 (1993), 147-70. To see this legal correspondence between Culpeper and Lady Ranelagh, see Copy Questions & Letter, Lady Ranelagh to Hartlib, [undated] Hartlib Papers 26/13/1A-2B; and Copy Extracts on Power of Commons to Levy Money, Culpeper to Hartlib, [undated], HP 26/12/1A-6B. While the document containing Lady Ranelagh's questions is undated, it must have been written in 1648 because of contextual clues within the letter and because one letter of Culpeper's, dated September 1648, makes reference to her recent questions. However, Ruth Connolly dates Lady Ranelagh's letter as August 1647. See Connolly, 'A Proselytising Protestant', p. 252. All references to the Hartlib Papers archive were taken from the digitised version, *The Hartlib Papers: A Complete Text and Image Database of the Papers of Samuel Hartlib (c. 1600-1662)*, 2nd edn, 2 CD-ROMs, (hriOnline, University of Sheffield, 2002). The Hartlib Circle will be discussed below.

judge of the occasion?’⁶³ The final question asks ‘Whether indeed both Houses may Legally levy mony and sequester the Estates of their Opposers, as they have done during this Warr, without and against the Kings Consent’, a point which Ruth Connolly has identified as ‘particularly of Presbyterian political thought’.⁶⁴ She concludes her final question with the suggestion that the king was enforcing his power over the Houses of Parliament by ‘Interposing his Negative voice to keepe them from Proceeding without Him’.⁶⁵ Her questions concern the legal implications of transferring power to Parliament and suggest that while Charles should remain King, he should lose most of his powers, including the royal veto. In effect, she was proposing a limited constitutional monarchy.

Culpeper’s response is long and detailed, and he humbly adds, ‘I shall bee glad, if what I writte last weeke, may have given my Lady any Satisfaction in Her Question’.⁶⁶ Ruth Connolly explains that ‘Culpeper’s argument is a militant endorsement of single chamber government and the subordination not only of the king but also the House of Lords to the House of Commons’.⁶⁷ There is no extant response to Culpeper’s letters, and we do not know if Lady Ranelagh agreed with his suggestions for such a radical governmental restructuring. This exchange not only documents Lady Ranelagh’s changing political viewpoint, but offers an example of her initiating a political discussion that was circulated within a manuscript coterie.⁶⁸ Further, it demonstrates that letter

⁶³ HP 26/13/1A-2B, Copy Questions & Letter, Lady Ranelagh to Hartlib, undated.

⁶⁴ Connolly, ‘A Proselytising Protestant’, p. 253.

⁶⁵ HP 26/13/1A-2B, Copy Questions & Letter, Lady Ranelagh to Hartlib, undated.

⁶⁶ HP 26/12/1A-6B (4A). Copy Extracts on Power of Commons to Levy Money, Culpeper to Hartlib, [undated].

⁶⁷ Connolly, ‘A Proselytising Protestant’, p. 254.

⁶⁸ It is worth mentioning that in Lady Ranelagh’s *ODNB* entry, Sarah Hutton makes reference to Sir Cheney Culpeper having called Ranelagh an Independent in 1647. In a personal email communication with Sarah Hutton, dated 2 December 2008, Professor Hutton told me that this reference comes from a letter that Sir Cheney Culpeper wrote to Hartlib in March 1647, which is in the Hartlib Papers archive. The only letter

writing was an effective way for seventeenth-century women to participate in and perhaps influence national politics.

Throughout the Civil Wars, Lady Ranelagh was active not only in politics, but in at least two intellectual circles with overlapping memberships: the ‘invisible college’ and the ‘Hartlib Circle’. The term ‘invisible college’ comes from Robert Boyle’s letters to his former tutors, and refers to the geographically disparate group of individuals who probably met in Lady Ranelagh’s home in the late 1640s.⁶⁹ The group shared some members with the Hartlib Circle and held the similar Baconian philosophy that ‘values no knowledge, but as it hath a tendency to use’;⁷⁰ however, the two groups were not synonymous, and Hartlib does not appear to have known about the group. Little is known about the college except that it functioned around 1646-47 and that it was ‘invisible’ because it did not have a geographical location, though Charles Webster suggests that meetings were probably held at Benjamin Worsley’s laboratory and Lady Ranelagh’s home.⁷¹

The intellectual group in which Lady Ranelagh appears to have been the most active is the vibrant circle surrounding the intelligencer Samuel Hartlib (c. 1600-1662)

that I could find with this date is Culpeper to Hartlib, 1 March 1646/7, HP 13/167-8, which does not contain this reference.

⁶⁹ For more on Lady Ranelagh’s relationship with the invisible college, see Carol Pal, ‘Republic of Women: Rethinking the Republic of Letters, 1630-1680’, 2 vols (unpublished doctoral thesis, Stanford University, 2006), I, pp. 257-61 and Charles Webster, *The Great Instauration: Science, Medicine and Reform 1626-1660* (London: Duckworth, 1975), pp. 61-62 and Charles Webster, ‘New Light on the Invisible College’, *Transactions of the Royal Historical Society*, 5th Series, 24 (1974), 17-42.

⁷⁰ The quotation is taken from a letter from Boyle to Marcombes dated 22 October 1646, in *The Correspondence of Robert Boyle*, ed. by Michael Hunter, Antonio Clericuzio and Lawrence Principe, 6 vols (London: Pickering and Chatto, 2001), I, pp. 36-42 (p. 42).

⁷¹ For proposed location of meetings, see Webster, *Great Instauration*, p. 62. Benjamin Worsley (1618-1677) was known as a Doctor of Physic, though it is unclear if he held a university qualification. He was involved in many Hartlibian projects, including the 1646 saltpetre project, and held various roles in government during the Commonwealth and after the Restoration. See Charles Webster ‘Benjamin Worsley: Engineering for Universal Reform from the Invisible College to the Navigation Act’ in *Samuel Hartlib & Universal Reformation: Studies in Intellectual Communication*, ed. by Mark Greengrass, Michael Leslie and Timothy Raylor (Cambridge: Cambridge University Press, 2002), pp. 213-35.

which has come to be known as the ‘Hartlib Circle’.⁷² From 1642 to 1660 this group was based in London but solicited, copied and circulated letters from members living all over continental Europe and in the American colonies. The circle transformed the pessimism inherent in Civil War England into an opportunity to realise God’s new kingdom on Earth. Through a combined interest in everything from natural philosophy to educational reform, husbandry, religious conversion and medicine, the Hartlibians (most of whom were Puritan Parliamentarians) were hopeful that they could craft a more egalitarian and godly society. It is through the Hartlib Papers archive that we know most about Lady Ranelagh’s activities during the 1640s and 1650s, as she was an active member throughout the group’s existence. Her name appears throughout the Hartlib Papers archive nearly 200 times, and the wealth of information evidences her involvement in a wide range of topics, including educational reform, chymistry, medicine, and optics.⁷³ She also was involved in promoting many of the Circle’s most important projects, including the publicly funded Office of Address and Worsley’s saltpetre project.⁷⁴

Lady Ranelagh’s time in the Hartlib Circle appears to have been when she developed an interest in natural philosophy and refined her practice of chymical medicine. Many of her medical recipes have been copied into Hartlib’s diaries, ‘the Ephemerides’, and her name is often invoked as an authority on the latest chemical remedies, such as the

⁷² For more on the Hartlib Circle, see G.H. Turnbull, *Hartlib, Dury and Comenius: Gleanings from Hartlib’s Papers* (London: University Press of Liverpool, 1947) and see the many excellent essays in *Samuel Hartlib and Universal Reformation*, ed. by Mark Greengrass, et al.

⁷³ This number is based on my research, and a discussion of these topics will be developed further in Chapter Two.

⁷⁴ The Office of Address was a state-funded project, partly derived from Théophraste Renaudot’s *Bureau d’Adresse*. The saltpetre project was a proposition to produce saltpetre in a more cost-efficient manner and to use it not only in gunpowder recipes, but also as a fertilizer. These projects are both discussed in detail in Webster, ‘Benjamin Worsley’, pp. 213-35.

Countess of Kent's powder.⁷⁵ Her interest in chymistry was not limited to the practice of medicine, and also concerned more esoteric subjects, such as the philosopher's stone.⁷⁶ It may have been through her interest in the subject that Robert Boyle became involved in chymistry, and she certainly promoted his early chymical experiments. During his years at Stalbridge, Lady Ranelagh sent to Boyle essential equipment so that he could build a chymical laboratory.⁷⁷ She also solicited him to write some of his earlier scientific treatises, including 'An Epistolical Discourse ... inviting all true lovers of Vertue and Mankind, to free and generous Communication of their Secrets and Receipts in Physick'.⁷⁸ Her patronage of this work offers some of the earliest evidence of Lady Ranelagh's espousal of Francis Bacon's theory that open communication of all useful natural philosophy is the most effective means of attaining the 'Great Instauration', a philosophy which she would develop further over the next decade as an active correspondent in the Hartlib Circle.⁷⁹ It also shows that Lady Ranelagh commissioned or encouraged texts on scientific subjects as well as those focused solely on ethics and religion, suggesting that she may have been a driving force behind more of Boyle's printed texts than was previously thought.⁸⁰

Many of Lady Ranelagh's other life-long friendships began during her years in the Hartlib Circle, and she may have introduced some of these members to her brother Robert. She developed a relationship with the poet and revolutionary John Milton from

⁷⁵ See 'Ephemerides', 1649, HP 28/1/32B-33A .

⁷⁶ Letter, Lady Ranelagh to Hartlib. 5 April 1659. Yale University, James Marshal and Marie-Louise Osborn Collection, Beinecke Rare Book and Manuscript Library. Document 38.

⁷⁷ Reprinted in *Correspondence of Boyle*, I, p. 50.

⁷⁸ See Letter, Robert Boyle to Lady Ranelagh, 2 August 1649, in *Correspondence of Boyle*, I, pp. 79-81. Her relationship to 'An Epistolical Discourse' will be elaborated upon in Chapter 2. Her involvement in Boyle's early printed works will be discussed in more detail in Chapter 3.

⁷⁹ Lady Ranelagh's belief in Baconian openness will be discussed in detail at the end of Chapter 2.

⁸⁰ For more on her involvement in Boyle's moral works, see John Harwood (ed.), *The Early Essays and Ethics of Robert Boyle* (Carbondale, IL: Southern IL University Press, 1991).

about 1646, who said, ‘to me she [Lady Ranelagh] has stood in the place of all kith and kin’. When she eventually returned to Ireland in 1656 he said that her absence caused him ‘no ordinary regret’.⁸¹ She employed Milton as a tutor to her son, Richard Jones, and Milton often encouraged Jones to follow the example of ‘that most exemplary woman, your mother’.⁸² After Milton discontinued his work with Richard, in 1654 Lady Ranelagh hired another friend from the Hartlib Circle, Henry Oldenburg, who would later become Secretary to the Royal Society. Throughout the 1650s, Lady Ranelagh and Oldenburg developed a friendship that was centred around discussions of natural philosophy, and they maintained frequent communication when Oldenburg accompanied Richard on his Grand Tour of the continent from 1657 to 1660. She was also intimate with Hartlib himself, evidenced by the fact that Hartlib had his post delivered to her address, and the two often sent their letters to correspondents in a shared parcel.⁸³

Another key relationship that Lady Ranelagh developed during her years in the Hartlib Circle was with her aunt, Dorothy Moore (later Dorothy Dury), who often wrote to Lady Ranelagh as one who shared her own strong religious sentiment and commitment to girls’ access to education.⁸⁴ Around 1650, Moore wrote a treatise ‘Of the Education of

⁸¹ John Milton, *Epistolarum Familiarium Liber Unus* (London, 1674), p. 47. I quote from the translation from the Latin in Lynch, ‘The Incomparable Lady Ranelagh’, p. 29.

⁸² Quoted from Lynch’s translation in ‘The Incomparable Lady Ranelagh’, p. 30. There are four letters printed in *Epistolarum Familiarium Liber Unus* from Milton to Richard Boyle: 21 September 1656 (pp. 46-47); Undated (pp. 51-52); Sextil. 1657 (pp. 57-58); and 20 Dec. 1659 (p. 64).

⁸³ For example, Dorothy Moore’s letter to Hartlib, probably written in July 1645, states that it should be left ‘For mr Hartlib at his howse in Duckes place, or to be Left at the Lady Ranalaughs howse in Queens street to be sent him’. See HP 3/2/143A-144B. The date is estimated by Lynette Hunter in *The Letters of Dorothy Moore, 1612-64: The Friendships, Marriage, and Intellectual Life of a Seventeenth-Century Woman*, ed. by Lynette Hunter (Aldershot, Hants: Ashgate, 2004), p. 79. Lady Ranelagh’s intellectual circles, in relation to both natural philosophy and medicine, will be explored in more detail in the following chapters.

⁸⁴ Dorothy Moore (c. 1612-64) was born in Ireland the daughter of the planter Sir John King and his wife Catherine Dury, but she spent her adulthood in the Netherlands and in England. She analysed theology with Lady Ranelagh and with the Protestant theologian André Rivet and was an avid and persuasive letter-writer. For more on Dorothy Moore, see Lynette Hunter’s ‘Introduction’, in *The Letters of Dorothy Moore*, pp. xv-liv. Also see Carol Pal, ‘Republic of Women’, I, Ch. 3.

Girles' which, though addressed only to a 'Madam', scholars agree is probably written to Lady Ranelagh.⁸⁵ The two frequently wrote letters to each other which concerned their obligations to God and considered how their Christian responsibility was shaped by their gender. When Moore was debating whether she should remain single or marry her future husband — John Dury, a friend of Lady Ranelagh's and fellow member of the Hartlib Circle — both Moore and Dury wrote to Lady Ranelagh for advice on the proposed union. The letters consider Lady Ranelagh as a spiritual advisor, and one that is explicitly female and can speak with authority about a woman's responsibility to God. The letters were annotated by Hartlib and circulated among other associates of the intellectual collective. Hartlib and Dury agreed that Moore's articulation of the subject could benefit a larger audience, so Hartlib printed the letters in an anonymous pamphlet in 1645, without seeking Moore's consent.⁸⁶ The pamphlet comprised three of Moore's letters and two of Dury's letters written to Lady Ranelagh, and it was titled *Madam, although my former freedom*. The names of Dury, Moore and Lady Ranelagh were erased for the print edition, and only the letters to Lady Ranelagh were printed — not her responses. The discourse places Lady Ranelagh in a position of authority on women's 'lived religion' and Hartlib's decision to print this pamphlet suggests that there may have been a market for intimate letters considering a woman's Christian obligation to marry.

By late 1653, Lady Ranelagh had secured a name for herself as an exemplary woman of religious piety and intellectual ability, as shown by William Robertson's choice to dedicate to her his first printed guide to understanding Hebrew: *A Gate or Door*

⁸⁵ BL Sloane MS 649, fols. 203-05. For those who agree that treatise is written to Lady Ranelagh, see, Lynette Hunter, *The Letters of Dorothy Moore*; Sarah Hutton, *ODNB* entry for 'Katherine Jones, Viscountess Ranelagh (1615-1691)'; Carol Pal, 'Republic of Women', I.

⁸⁶ For Moore's angry response to this print publication, see HP 3/2/143A-144B, Undated Letter, Dorothy Moore to Samuel Hartlib.

to the Holy Tongue, Opened in English (1653).⁸⁷ In his dedicatory epistle to ‘The Right Honorable The Lady Vice-Countesse Ranalaugh’, Robertson recounts his rewarding experience of having taught Hebrew to her, marvelling how she had gained ‘proficiency in so short a time’.⁸⁸ The experience showed him that ‘the Female sexe is, fully, capabale enough of this kinde of learning’, which he admits he had not previously believed. In printing this book and dedicating it to Lady Ranelagh, Robertson hoped that it might serve as ‘encouragement of other Women of Spirit, and Ladies of honour ... to make some improvement of their own abilities’.⁸⁹ The dedication explicitly links Lady Ranelagh’s decision to learn Hebrew to her interest in gaining a better understanding of the scriptures. The book was reprinted with a different title, *The First Gate, or The Outward Door to the Holy Tongue Opened in English* in the following year, and included the same dedication to Lady Ranelagh. In 1655, Robertson printed a sequel to this work, which he entitled *The Second Gate, or the Inner Door to the Holy Tongue* (1655), and which included a new dedication to Lady Ranelagh, following a dedication to another member of the Hartlib Circle, the M.P. John Sadler.⁹⁰ In the second dedication, Robertson says that Lady Ranelagh was ‘amongst the greatest ... encouragement’ for him to publish a Hebrew-to-English dictionary to complement his previous grammar of the Hebrew

⁸⁷ William Robertson was born in Scotland and educated at the University of Edinburgh. He moved to London in 1651 and became a teacher of Hebrew. Robertson found many powerful patrons among the puritans of the Interregnum and printed six studies of the Hebrew language between 1653 and 1656. His religious outlook was shaped largely by Scottish Presbyterian divines who believed that knowledge of the Hebrew bible was a prerequisite to entering the ministry. Robertson’s fortunes turned with the Restoration, and he would wait until 1680 before he was appointed to teach Hebrew at Cambridge University. See *ODNB* entry for ‘William Robertson (fl. 1651-1685)’.

⁸⁸ Robertson, *A Gate or Door to the Holy Tongue, Opened in English* (London: 1653), sigs. A2r-A3r.

⁸⁹ Robertson, *A Gate or Door*, sigs. A2v & A3r.

⁹⁰ John Sadler (1615-1674) was a Cambridge Platonist and member of the Hartlib Circle who held various political positions throughout the Interregnum. He was a millenarian and occasionally experienced unconventional religious experiences, such as falling into a three-day vision or delivering prophecies of catastrophic events. See *ODNB* entry for ‘John Sadler (1615-1674)’.

language.⁹¹ He states that he ‘was often grieved, that your Ladyship with severall others that have begun, could not make so speedy and easie a progresse in these studies, because of the want of a dictionary, in our own Vulgar Language’.⁹² This new dedication shows that Lady Ranelagh was using Robertson’s previous book, and that she spent several years improving her knowledge of Hebrew and promoting a wider use of the language.

Further evidence of the authoritative religious reputation which Lady Ranelagh held was that in 1656, Menasseh ben Israel, the first Jewish rabbi to visit London in nearly four centuries, dined at Lady Ranelagh’s house.⁹³ On his visit, Menasseh met with some of the most distinguished people in England, including the Lord Protector himself, the Cambridge Professor of Hebrew, Dr Ralph Cudworth, and Henry Oldenburg.⁹⁴ Lady Ranelagh may have arranged his visit in part because of her recent interest in the Hebrew language, as shown by Williamson’s recent book dedications to her. However, she probably had a stronger personal interest because the rabbi had come to England to promote the idea of allowing Jews to re-enter the country. In the 1650s, the conversion of the Jews was seen by many religious radicals as a prerequisite to the millennium — a view maintained by many in the Hartlib Circle.⁹⁵ This is best evidenced through Moses Wall’s translation into English of Menasseh ben Israel’s Hebrew text *The Hope of Israel*

⁹¹ Robertson, *The Second Gate*, sigs. §3r-v (§3r).

⁹² Robertson, *The Second Gate*, sigs. §3r-v (§3v).

⁹³ A letter from Oldenburg to ben Israel in 1657 reminds the latter that ‘I was in your company several times, both at Mr. Boreel’s and at the house of that very noble and pious Lady Ranelagh’. See Henry Oldenburg to Menasseh ben Israel, 25 July 1657 in *Correspondence of Oldenburg*, I, pp. 123-27 (p. 125).

⁹⁴ Cecil Roth, *A Life of Menasseh ben Israel: Rabbi, Printer, and Diplomat* (Philadelphia: The Jewish Publication Society of American, 1934), esp. pp. 248-61. For a more recent study of Menasseh (though Lady Ranelagh is not mentioned in the account), see David Katz, *Philo-semitism and the Readmission of the Jews to England, 1603-1655* (Oxford: Oxford University Press, 1982), Ch. 6.

⁹⁵ Richard H. Popkin, ‘Hartlib, Dury and the Jews’, in *Samuel Hartlib and Universal Reformation*, pp. 118-36.

(1652), to which he attached an accompanying essay on the conversion of the Jews.⁹⁶

Lady Ranelagh's own millenarianism surfaces in letters to her brother Robert Boyle and to Henry Oldenburg in the 1650s. For example, in a letter to her brother in 1652, she says 'its a brave thing to be one of those, that shall lift up their heads with joy in Expectation of a present redemption, when all these ruins and Confusions shall be upon the earth'.⁹⁷ Nonetheless, her visit with Menasseh ben Israel places Lady Ranelagh among some of the most powerful religious authorities in England, and their amicable meeting confirms her philosemitism.

Around September 1656, Lady Ranelagh left London to spend roughly two and a half years in Ireland.⁹⁸ The reason for this trip appears to have been concerned mostly with reclaiming the Boyle family estates in Ireland, as well as pursuing a settlement from her husband.⁹⁹ By this time, many of Lady Ranelagh's friends and family members were in powerful positions to assist her reclamation of Boyle family lands in Ireland and her legal appeal for a financial settlement from Lord Ranelagh. Her brother, Lord Broghill, was one of Cromwell's leading advisors in these years, with a seat in the Privy Council, and he was appointed to the committee for Irish affairs just as Lady Ranelagh was

⁹⁶ Richard H. Popkin, 'A Note on Moses Wall', in *Menasseh ben Israel, The Hope of Israel: The English Translation by Moses Wall, 1652*, ed. by Henry Méchoul and Gérard Nahon (Oxford: Oxford University Press, 1987), pp. 165-70.

⁹⁷ *Correspondence of Boyle*, I, pp. 135-38. Letter, Lady Ranelagh to Robert Boyle, 14 September [1652]. Also see Copy Extracts, Lady Ranelagh to Henry Oldenburg, 1656-57, Royal Society Library, MS/1, fols. 190-92. The nature of Lady Ranelagh's millenarianism has been debated. See James Jacob, 'Boyle's Circle in the Protectorate: Revelation, Politics and the Millennium', *Journal of the History of Ideas*, 38 (1977), 118-32; Malcolm Oster, 'Millenarianism and the New Science: The Case of Robert Boyle', in *Samuel Hartlib & Universal Reformation*, pp. 137-48; Taylor, 'Writing Women', II, pp. 331-38.

⁹⁸ In a letter written by Milton to Richard Boyle dated 21 September 1656, he laments that Lady Ranelagh had left London. See John Milton, *Epistolarum Familiarum*, pp. 46-47. In a letter that William Petty wrote from Dublin to Hartlib on 5 Nov 1656, he says that Lady Ranelagh had arrived safely in Ireland. See Yale University, Beinecke Rare Book and Manuscript Library, The James Marshal and Marie-Louise Osborn Collection, Document 29.

⁹⁹ In a letter written 3 June [1657] from Lady Ranelagh to Robert Boyle, she mentions that she had received his 'list of your Connaught lands', which she would process and write to him again when she had more information. See *Correspondence of Boyle*, I, pp. 215-216.

leaving for Ireland. Her friend from the Hartlib Circle, Benjamin Worsley, was the Surveyor-General of Ireland, and as such responsible for forfeited estates. While she achieved some success on this visit, the Boyle family would continue to battle for their lands in Ireland, and Lady Ranelagh would continue trying for a settlement from her husband, well into the Restoration. Though her time in Ireland was occupied mostly with political and financial matters, she also maintained a frequent correspondence with fellow members of the Hartlib Circle. She wrote a discourse on dreams to John Beale, which is no longer extant, though Beale's reply is.¹⁰⁰ She sent to Hartlib medical recipes that she found effective, including one from Sir Kenelm Digby that involved complicated chymical procedures.¹⁰¹ She also met with other members of the Hartlib Circle based in Ireland, such as William Petty, Miles Symner and Robert Wood.¹⁰²

¹⁰⁰ Beale tells Hartlib he spent much time meditating on Lady Ranelagh's discourse on dreams in a letter dated 28 May 1657: HP 25/5/1A-12B. John Beale (1608-1683) was a clergyman in Herefordshire who became involved in the Hartlib Circle in the late 1650s. He became a Fellow of the Royal Society in 1663. His interests included prophetic dreams, agriculture, horticulture, and natural philosophy. See Mayling Stubbs, 'John Beale, Philosophical Gardener of Herefordshire; Part I. Prelude to the Royal Society (1608-1663)', *Annals of Science*, 39 (1982), 463-489, and see 'John Beale (bap. 1608, d. 1683)' entry in *ODNB*.

¹⁰¹ See HP 66/8/1A-2B, Extract & Recipes in Scribal Hands ? & ?, Lady Ranelagh and Kenelm Digby, 11 Sept 1658.

¹⁰² William Petty wrote from Dublin to Hartlib on 5 Nov 1656 and says that Lady Ranelagh had arrived safely in Ireland and brought him news of Robert Boyle's illness. See Yale University, Beinecke Rare Book and Manuscript Library, The James Marshal and Marie-Louise Osborn Collection, Document 29. Robert Wood said he spent hours discoursing with 'the incomparable Lady Ranalaugh'. See HP 33/1/11A-12B, Letter, Robert Wood to Hartlib, 3 March 1657. In a letter from 27 July [1657], Wood also tells Hartlib that he took a copy of a 'Proposal for planting Ireland' to Lady Ranelagh and that Major Symner will collect it from her. See HP 31/1/21A-22B. William Petty originally claimed fame for his medical expertise and chemical experiments. He replaced Benjamin Worsley as Surveyor of Ireland when his 'Down survey' was accepted in 1654. He became associated with the Hartlib Circle because he shared the group's utilitarian ambitions. After the Restoration, he became a Founder Fellow of the Royal Society and over the next two decades he held various positions related to Irish lands. He developed a system of statistical analysis which he called 'political arithmetic'. See *ODNB* entry for 'Sir William Petty (1623-1687)' and Ted McCormick, *William Petty and the Ambitions of Political Arithmetic* (Oxford: Oxford University Press, 2009). Robert Wood was a mathematician especially interested in economics. He was interested in the political economy of Ireland and spent much of his life in that country. He was elected a Fellow of the Royal Society in 1681 and died in Dublin in 1685. See the *ODNB* entry for 'Robert Wood (1621/2-1685)'. Major Miles Symner was the first professor of mathematics at Trinity College, Dublin. Around 1656, Lady Ranelagh and Robert Wood introduced Symner to the Hartlib Circle, and he took over the project to survey Ireland. He also had an interest in astronomy. See T.C. Barnard, 'Miles Symner and the New Learning in Seventeenth-Century Ireland', *Journal of the Royal Society of Antiquaries of Ireland*, 102 (1972), 129-42.

A letter Lady Ranelagh wrote to her brother Lord Broghill on 17 September 1658 offers a snapshot of her personal and political life during her time in Ireland. The letter describes her complex emotional and political response to the news of Oliver Cromwell's death. She is somewhat critical of Cromwell, saying that 'his performances reached not the making good of his professions', but was nonetheless hopeful that 'the memory of his virtues and great aymes an actions' would allow him a 'place amongst the worthiest of men'.¹⁰³ She feared that 'by his highness's death, God has given a warneing=peece of great confusions and disorders approaching upon these nations', and that people should take advantage of 'this opertunety of present peace' and be ready for the 'abridging of unnecessary expences'. The news of his death also affected her on a personal level, as she had recently appealed to Cromwell for a financial settlement regarding land in Ireland, and recognised that his death 'takes away what engagement lay upon me to stay in this country'. This letter was later printed in *A Collection of the State Papers of John Thurloe, Esq.*, making it one of the very few pieces of her writings ever to be printed.¹⁰⁴

On 15 Feb 1659 Lady Ranelagh returned to England with her brother Lord Broghill and two of her daughters.¹⁰⁵ Her sister-in-law, the Countess of Cork, wrote that Lady Ranelagh had left with her a batch of ten items. These are worth recounting here in detail, as no will for Lady Ranelagh survives, and the list affords us a glimpse into what and whom she deemed important in case of death in 1659:

¹⁰³ *A Collection of the State Papers of John Thurloe, Esq.*, ed. by Thomas Birch, 7 vols (London: 1752), VII, pp. 395-397 (p. 395).

¹⁰⁴ *State Papers of John Thurloe*, I, p. i. Many of her other printed letters were included in Thomas Birch's other impressive folio collection: *The Works of the Honourable Robert Boyle*, ed. by Thomas Birch, 5 vols (London: 1744).

¹⁰⁵ Chatsworth House, Cork MSS, Misc. Box 5. fols. 3v-4r. Journal of Elizabeth (Clifford), Countess of Cork and Burlington, 1650s-1688; A letter written on 2 March 1659 from Robert Wood to Hartlib also mentions that 'My Lady Ranulaugh & her brother went a board at Youghall' about a fortnight earlier. See HP 33/1/45A-46B.

i a l^{re}: sealed up to be opened only in case of her death directed to her son Mr Richard Jones
 2 another soe sealed & indorst for My Ld:
 3 & another ye like for my Brother Mr Robt Boyle
 4 one l^{re}: open from my Ld: Cheife Justice Lowther to my Sister about evidences he has in his keeping
 5 a paper wherin are Coppyes of l^{rs}: past betwixt My ld: Ranalugh & his Daughter Frances
 6 another paper of ye same
 7 a paper by way of narrative of his L^{ps}: proceedings with his foresaid daughter
 8 a paper by way of narrative of his proceedings with My Sister his Ladye
 9 a paper of his proceedings about his daughter Eliz: Jones
 10 a bill of moneyes rec^d by my Sis: of My Ld Ranalaugh since she came to Dublin all these were since delivrd back to her¹⁰⁶

Lady Ranelagh was taking precaution that the financial and legal advances she made while in Ireland would not be overturned in the event of her death. These items also suggest that Lord and Lady Ranelagh were in contact during this time in Ireland and that Lord Ranelagh exchanged letters with their daughter Frances, who was one of the two daughters who accompanied Lady Ranelagh to Ireland. Her main concern was ensuring that in the event of her death, her children would not be left in poverty, but would receive money from their father. Though the contents of the sealed letters addressed to her son and her two brothers will never be known, we may assume that she was leaving important responsibilities to them, possibly asking them to carry out important legal actions on her behalf or leaving them with an inventory of important items that they would inherit or should distribute. The rough journey back to England probably made her thankful that she had taken such precautions, as a letter she wrote from Bristol to her brother the Earl of Cork recounts a terrifying storm in which the ship struck a shoal. Both she and her brother Lord Broghill thought they would die, and she relates how Broghill dramatically

¹⁰⁶ Chatsworth House, Cork MSS, Misc. Box 5. fols. 3v-4r. Journal of Elizabeth (Clifford), Countess of Cork and Burlington, 1650s-1688.

‘Cryed out we are al gonn god have mercy upon our soules’ and she prepared her children to make peace with death.¹⁰⁷

Once back in England, she still was active in exploring litigation pertaining to land ownership and continued pursuing Lord Ranelagh for a financial settlement. In March 1659, Lady Ranelagh decided to lay a formal complaint against her husband before the Committee for Grievances. She asked her brother-in-law Charles Rich to stand up against him because not only did Charles support her lawsuit, but his place in Parliament also meant that he had useful contacts and ready access to the members of the Committee.¹⁰⁸ In April 1659, she explained to her brother Cork that ‘H[is] H[ighness] was pleased on Thursday last to recommend my petition to ye council himselfe where I am told they were pleased to afford me many very good words, they have reffered it to a comitte who are like to be friendly & wil I hope bee speedy in their determination’.¹⁰⁹ However, Parliament was dissolved shortly after and Richard’s rule came to an abrupt end in the following month, putting a premature end to Lady Ranelagh’s case. It was not until October 1666 that she finally secured a settlement from Lord Ranelagh — only four years before his death.¹¹⁰ Though her personal circumstances necessitated an interest in law, Lady Ranealgh was also interested in the subject on a national level. Her letter to Culpeper in the late 1640s evidenced this interest, and in May 1659 she was

¹⁰⁷ Chatsworth House, Cork MSS, Box 30, Letter 95. Letter, Lady Ranelagh to the 2nd Earl of Cork, undated.

¹⁰⁸ Chatsworth House, Cork MSS, Box 30, Letter 96. Letter, Lady Ranelagh to the 2nd Earl of Cork, 8 March 1659. The manuscript is in terrible condition, so also see *Calendar of the Lismore Manuscripts with Index of Matters A.D. 1396-1774* (private publication: no year), pp. 1120-1121. Charles Rich would become Earl of Warwick later that year. He was married to Lady Ranelagh’s sister, Mary.

¹⁰⁹ Chatsworth House, Cork MSS, Box 31, Letter 4. Letter, Lady Ranelagh to the 2nd Earl of Cork, 12 April 1659.

¹¹⁰ The negotiations were mentioned throughout her letters to her brother Burlington from January-September 1666: BL Add. MS 75354, fols. 50-119. Finally, on 3 October 1666, Burlington records in his diary that he met with Lord Ranelagh and they reached a settlement for his sister and her children. See Chatsworth House, Cork MSS, Miscellaneous Box 1, ‘Diaries of Lord Burlington’, 3 vols., no pagination.

corresponding with John Beale and Samuel Hartlib regarding ‘the reformation of English laws and lawyers’.¹¹¹

Though Lady Ranelagh frequently sent letters to her brother Cork throughout the duration of Richard Cromwell’s short term, it is difficult to discern from them her political opinion of him, as most concerned her case against her husband.¹¹² The only solid evidence of her opinion may be found in a letter from November 1658 which Peter Figulus wrote to Hartlib concerning Lady Ranelagh’s predictions that the political situation under Richard could be detrimental to their goal of uniting Protestant groups across Europe.¹¹³ Figulus explained that ‘the Prophecies both of that late pious prelate as also of your most wise and godly sybilla Lady Viscountesse Ranalaugh, her pious and truly religious considerations both upon the present and future state of protestant churches & people might well become true to our own fault’.¹¹⁴ Ruth Connolly has identified ‘that late pious prelate’ as James Ussher (1581-1656), Archbishop of Armagh, who shared Lady Ranelagh’s goal of uniting the various Protestant churches.¹¹⁵ It is unclear exactly why she thought that Richard’s governance could cause further disagreements between different branches of Protestantism, but this may have stemmed from her general fear of the inevitable impending changes now that Oliver was no longer Lord Protector. While Oliver’s blend of religion and politics gave great hope to the Hartlibians, Richard’s uncertain religious and political outlook made it difficult for them

¹¹¹ See letter from Samuel Hartlib to Robert Boyle, May 31 1659, in *Correspondence of Boyle*, I, pp. 357-59 (p. 357).

¹¹² Chatsworth House, Cork MSS, Boxes 30-31.

¹¹³ Peter Figulus was the son-in-law of Jan Comenius and may have been responsible for translating some of Lady Ranelagh’s letters into German, which will be discussed in Chapter 2.

¹¹⁴ HP 9/17/51A-52B. Letter, Peter Figulus to Samuel Hartlib, 29 Nov. 1658.

¹¹⁵ Connolly, “‘A Wise and Godly Sybilla’: Viscountess Ranelagh and the Politics of International Protestantism”, in *Women, Gender and Radical Religion in Early Modern Europe*, ed. by Sylvia Brown (Leiden: Brill, 2007), pp. 285-306.

to unite behind him. Furthermore, in Figulus's letter we see that Lady Ranelagh's religious predictions were placed on a par with those of one of the most respected contemporary theological commentators and her views were deemed significant not only in England, but also on the continent.

Even if Lady Ranelagh may have held reservations about Richard's national political agenda, he respected her (as seen by his willingness to personally present her settlement case to a grievance committee) and she maintained friendly contact with his family. One letter written in April 1659 from Robert Wood to Hartlib included a personal salutation from a Lady Cromwell to be passed on to Lady Ranelagh.¹¹⁶ From 1656, Wood had been living in the household of Henry Cromwell (1628-74), Oliver's son and Richard's younger brother. Henry was serving as Chief Administrator of Ireland, and Wood was being pressured by Hartlib to complete Gerard and Arnold Boates's *Irelands Naturall History*.¹¹⁷ Therefore, Wood's reference is to Henry's wife, the younger Lady Cromwell, Elizabeth Cromwell (née Russell). This acknowledgement shows that Lady Ranelagh remained on friendly terms with the Cromwell family even at the height of general contempt for Richard Cromwell.

When Richard Cromwell was forced to abdicate the Protectorate in May 1659, Lady Ranelagh perceived the ease of 'our late great sudaine & bloodless change' as God's work.¹¹⁸ As she explained in a letter to her Royalist brother Richard, 2nd Earl of Cork: 'al this in a fortnights space without Imprisoning restraineing or much less kiling

¹¹⁶ The postscript reads: 'My very humble service to the excellent Lady when you see her Pray tell her that my Lady Cromwell & all her children are very well, that she lately asked me how my Lady Ranulaugh did, & desired to be remembred unto her.' See HP 33/1/50A-51B, Letter, Robert Wood to Hartlib, 2 April 1659.

¹¹⁷ T.C. Barnard, 'Miles Symner and the New Learning in Seventeenth-Century Ireland', *Journal of the Royal Society of Antiquaries of Ireland*, 102 (1972), 129-42 (135).

¹¹⁸ Chatsworth House, Cork MSS, Box 31, Letter 15, fols. 1-3. Letter, Lady Ranelagh to the 2nd Earl of Cork, 10 May 1659.

any one of those persons who were doubtless opposers of this worke in their harts & who might probably have binn soe with their hands, if god had not restrained ym from accomplishing their owne wishes'.¹¹⁹ When analysing Lady Ranelagh's complicated and malleable political opinions throughout the Civil Wars and Interregnum, it appears that her commitment to peace and her providential belief that political upheaval was a sign of God's anger were philosophies that she held more strongly than adherence to any political party. This analysis of her changing political opinion does not mean to suggest that Lady Ranelagh was one of those 'who turned their coats with the times and followed with a clear conscience the changes of regime between 1649 and 1688'.¹²⁰ Instead, I am arguing that religion guided her political opinion throughout her life, and that in the 1640s and 1650s this manifested itself through an unfaltering belief in providence. The philosophy that fortune came about through God's providence was held by her father the Earl of the Cork, and was one that Malcolm Oster has convincingly shown Robert Boyle to have endorsed during the Civil Wars and Interregnum.¹²¹ For Lady Ranelagh, the reverse was also true. Throughout the 1640s and 1650s, she analysed her world for indications as to how God perceived human actions. Disasters such as famine, poverty or plague were all signs of divine anger, while a 'great sudaine & bloodless change' suggested God approved. People, therefore, had a responsibility to live according to God's will, or risk His punishment. Such providential thoughts, coupled with her religious responsibility to promote peace, show how she could move from being

¹¹⁹ Chatsworth House, Cork MSS, Box 31, Letter 15, fols. 1-3. Letter, Lady Ranelagh to the 2nd Earl of Cork, 10 May 1659.

¹²⁰ John M. Wallace, *Destiny His Choice: The Loyalism of Andrew Marvell* (Cambridge: Cambridge UP, 1968, repr. 1980), p. 4.

¹²¹ Malcolm Oster, 'Virtue, Providence and Political Neutralism: Boyle and Interregnum Politics', in *Robert Boyle Reconsidered*, ed. by Michael Hunter (Cambridge: Cambridge University Press, 1994), pp. 19-36.

sympathetic to Charles I in 1644, to advocating for a constitutional monarchy in 1648, to supporting Oliver Cromwell, and finally accepting Richard Cromwell's overthrow. She accepted changes in government as long as she felt that the government still performed according to God's will; but when circumstances required, she made it her responsibility to pursue necessary political changes to secure peace. There are no extant references on how Lady Ranelagh viewed the Restoration of the Stuart monarchy one year later. However, as we shall see in the next section, Charles II's reign would bring mixed fortune to this deeply moral and devout woman.

Restoration England: 1660-1685

Though many of Lady Ranelagh's associates were leading figures in the previous government, she also had enough influential Royalist connections to secure herself a comfortable position under the new government. Her old friend Edward Hyde became Lord Chancellor, and in 1668 Benjamin Worsley became a member of the Council of Trade, and in 1672 secretary and treasurer of the Council for Trade and Plantations.¹²² Lord John Berkeley, a loyal Royalist throughout the Civil Wars and Interregnum, was rewarded with places as commissioner of the navy and lord president of Connaught, in Ireland.¹²³ Her brother the Earl of Cork, who had also remained a royalist throughout the Civil Wars and Interregnum, was appointed Lord Treasurer in Ireland in 1661 and

¹²² See *ODNB* for 'Benjamin Worsley (1617/18-1677)'. It is not clear whether Lady Ranelagh and Hyde maintained contact during the 1650s when he was in exile, but there are extant letters to him in the 1640s and 1660s, suggesting they either maintained a correspondence or rebuilt their friendship upon his return to England in the Restoration.

¹²³ In a letter from John Dury to Hartlib written around 1661, he mentions 'my Ld John Berclay who is a gentelman of a free & Generous disposition & one with whom the Lady Ranalaugh is intimat'. See HP 4/4/43A-B, Letter, John Dury to [Hartlib], undated [c. June 1661]. Also see *ODNB* entry for 'John Berkeley, first Baron Berkeley of Stratton (1607- 1678)'.

received the English Earldom of Burlington in 1665.¹²⁴ Her other brother, Lord Broghill, was favoured at the beginning of Charles's reign and received the Irish Earldom of Orrery in September 1660.¹²⁵

While Lady Ranelagh associated with many Royalists, she appears to have distanced herself from the court as much as possible. In a letter to the Countess of Orrery, written sometime after 1665, she apologises for not having written earlier, explaining that she had 'binn taken up in an Employnt very extraordinary to me'.¹²⁶ This extraordinary employment was 'wayteing upon hir Ma^{ty} who was pleased to persue me wth much repeated gracious quarelings at my not comeing to pay hir yt duty & soe many invitations to come yt to fence my self from great rudeness to=wards hir to whome I owe so much defference I went yt day & could not get home til late'.

However, in May and June of 1667, the severe illnesses and eventual deaths of the Duke of Cambridge and the Duke of Kendal caused Lady Ranelagh to be 'almost a constant courtier' at court which, as she told her brother Burlington 'had been but a Royal Hospital'.¹²⁷ Though sympathetic to their sicknesses and critical of the physicians who did not help the Duke of Kendal in his dying hour, she still held reservations about the royal family. In a letter to her brother Burlington, she describes the deaths of the young dukes as 'a very emmident & smart judgmt of god upon ye Royal famelly & in ym upon ye nation god send it may be soe layd to hart as to anserer god and yt his hand may

¹²⁴ See *ODNB* for 'Richard Boyle, first Earl of Burlington and second Earl of Cork (1612-1698)'.

¹²⁵ See *ODNB* for 'Roger Boyle, first Earl of Orrery' (1621-1679)'.

¹²⁶ West Sussex Record Office, Petworth House, Orrery MS 13219. The letter must be dated after 1665 because she refers to her 'bro[ther] Burl[ington]', who received the title of Burlington in 1665.

¹²⁷ BL Add. MS 75354, fols. 74-77. Letter, Lady Ranelagh to Lord Burlington, 1 June [1667]. The Duke of Kendal was Charles Stuart, son of James, Duke of York (later James II) and his first wife Anne Hyde (daughter of Edward Hyde, Earl of Clarendon). He died just before his first birthday. The Duke of Cambridge was James Stuart, older brother of the Duke of Kendal. He died one month after his brother, just before he would have turned four years-old.

not continue to be longer stretched out agast in anger'.¹²⁸ Her letters written from 1663 to 1667 are increasingly critical of the royal family and the state of the nation, and she was among those who found the attack of the Dutch Fleet in June 1667 as God's punishment: 'Wtever ye final conclusion be ye beginning is a rebuke from god to ye nation'.¹²⁹

Though the Restoration period was less conducive to living a moral life and exploring theology, Lady Ranelagh further cultivated an image of piety and religious authority among her friends. In September 1660, she was involved in a complex discussion with John Beale concerning the Apostle's Creed.¹³⁰ Beale's theological opinions were highly regarded by many, a reputation which he initially earned with his correspondence in the Hartlib Circle and later developed through three key religious appointments which he gained in the 1660s; however, in this case, Beale spoke to Lady Ranelagh as a figure of religious authority.¹³¹ In 1665, Robert Boyle printed some of his early moral essays in the book *Occasional Reflections*, which he dedicated to his sister, under the sobriquet of Sophronia, as she was the motivating force behind their composition and print publication.¹³²

¹²⁸ BL Add. MS 75354, fols. 70-73. Letter, Lady Ranelagh to Lord Burlington, 25 May [1667].

¹²⁹ BL Add. MS 75354, fols. 79-82. Letter, Lady Ranelagh to Richard, Earl of Burlington, June 15 [1667].

¹³⁰ The earliest dated letter in this series is 5 September 1660, in which Beale is commenting on the analysis he offered in his last letter and apologises for his 'many and frequent greetings'. This demonstrates that their correspondence on this particular subject had begun earlier. See Royal Society Library, RB/3/1/23. Beale and Lady Ranelagh held a similarly sophisticated theological discussion during their years in the Hartlib Circle, and some of Beale's letters to Lady Ranelagh have been copied and annotated by Hartlib, suggesting they were circulated to other members of the circle. For example, see HP 27/16/1A-14B.

¹³¹ He was made rector of Yeovil, Somerset in 1660, rector of Sock Dennis in 1661, and chaplain-extraordinary to Charles II in 1665. See *ODNB* entry for 'John Beale (bap. 1608-1683)'. The letter is also important because while it is written primarily in English, it also includes many lengthy Biblical quotations in Latin without translation, suggesting that Lady Ranelagh could read Latin.

¹³² Boyle wrote these essays between 1645 and 1649 and exchanged letters with his sister about their composition, but they were not published until 1665. Robert Boyle, *Occasional Reflections upon several Subjects* (London: 1665). See epistolary dedication 'To Sophronia', sigs. A3r-A7r. Sophronia may be derived from the Greek word for temperance (*sōphronsunē*) or wisdom (*phronēsis*) or both. See *The Early Essays and Ethics of Robert Boyle*, ed. John T. Harwood (Carbondale: Southern Illinois University Press, 1991), pp. xx and lviii-lix, n. 78. In a letter to Boyle dated 9 September 1665, Lady Ranelagh referred to a

Though Lady Ranelagh's religious views may have inclined towards Presbyterianism during the Civil Wars and Interregnum, it is in the 1660s when solid links between her and the Presbyterians first appear. In a memorandum by Secretary Nicholas written on 26 August 1661, he states that Presbyterians were meeting at Lady Ranelagh's house. According to Nicholas, Sir John Clotworthy and the 'dangerous man' Major Robert were meeting with others at Lady Ranelagh's home, 'whom they highly extol'.¹³³ It is unclear who 'Major Robert' is, but he may have been a confidant of Clotworthy's, her brother-in-law. Her letters to her brother Cork written throughout the 1660s evidence that she was also associated with the active Presbyterian Sir John Robartes (1606-1685), who was appointed Lord Privy Seal in May 1661 because Charles II knew of his influence in parliament and needed to maintain an alliance with him.¹³⁴ Lady Ranelagh maintained contact with Robartes at least throughout the next decade, even though he fiercely opposed her other friend, the Earl of Clarendon.¹³⁵ These friendships she cultivated during the 1660s provided a foundation for her Presbyterian activity in the 1670s, which will be discussed later.

In 1664, Lady Ranelagh moved to Pall Mall, where she would live for the rest of her life. Her brother-in-law, Charles Rich, Earl of Warwick, assigned to her two houses on the south side of Pall Mall.¹³⁶ Her neighbours included Dr Thomas Sydenham and

possible second edition of *Occasional Reflections*, but said 'since you still Continue resolute against publishing those you make I dare urge it noe further'. See *Correspondence of Boyle*, II, pp. 525-26 (p. 525).

¹³³ *Calendar of State Papers Domestic, 1661-1662* (London: Longman, 1861), p. 71.

¹³⁴ See *ODNB* entry for 'John Robartes, first Earl of Radnor (1606-1685)'.

¹³⁵ Lady Ranelagh makes several references to meeting with 'my Lord Privy Seal' in her letters from 1666 and 1667. See BL Add. MS 75354, fols. 50-119.

¹³⁶ 'Nos. 83-84 Pall Mall', in *Survey of London*, ed. by F.H.W. Sheppard, vol. 29 & 30, (London: English Heritage, 1960).

later her friend Henry Oldenburg and the King's mistress, the actress Nell Gwynne.¹³⁷

Lady Ranelagh had a professional relationship with Sydenham and he lent her money for an unknown cause before September 1666, though his difficult temper sometimes annoyed her.¹³⁸

Lady Ranelagh was in London when the plague hit in 1665, and she interpreted the disaster as the wrath of God. In a letter to her brother Cork in Dublin, she told him 'we are soe beset in England wth occasions yt excite yt passion by ye dreadful spreading of yt infection from London yt is there more destructive yn any Plauge ever was before'; therefore, she urged him not to travel to England at this time.¹³⁹ She developed her argument by saying this was God's punishment for 'our practises making some terrible judgmt' and that this was only a 'beginning of many other myseries yt wilbe ye natural consequences thereof'. She herself left London at the height of the plague and lived for many months with her sister Lady Warwick at Leighs in Essex.¹⁴⁰

Lady Ranelagh's understanding of the plague as God's punishment is developed in more detail in her recently discovered treatise, 'Discourse Concerning the Plague', on the plague of 1665. The treatise, which exists in a fair copy in her hand and was intended

¹³⁷ 'No. 79 Pall Mall' and 'Nos. 80-82 Pall Mall', in *Survey of London*, vol. 29 & 30. Sydenham lived in Pall Mall from 1660 until his death in 1689. Nell Gwynne moved into Pall Mall in 1670 and lived there until her death in 1687. In a letter to Boyle in August 1665, Lady Ranelagh tells her brother that she also 'got a lodging at Newington greene'. See *Correspondence of Boyle*, II, pp. 503-04 (p. 504).

¹³⁸ Kenneth Dewhurst, *Dr. Thomas Sydenham (1624-1689): His Life and Original Writings* (London: The Wellcome Historical Medical Library, 1966), pp. 34 & 74; G. C. Meynell, *Materials for a Biography of Dr Thomas Sydenham (1624-1689)* (Folkstone, Kent: Winterdown Books, 1988), p. 79. Thomas Sydenham was educated at Oxford University and moved to London in the mid-1650s to begin his medical practice. Throughout the Restoration, he printed many important medical and theological books. He was licensed by the College of Physicians in 1663, but he did not actually receive his MD from Cambridge until 1676. He was a friend of Robert Boyle, evidenced by his choice to dedicate to Boyle *Methodus curandi fibres* (1666), and by allowing Boyle to assist him on some of his medical visits. See *ODNB* entry for 'Thomas Sydenham (bap. 1624-1689)'.

¹³⁹ BL Add. MS 75354, fols. 50-51, Lady Ranelagh to the second earl of Cork, undated letter.

¹⁴⁰ The date range of the extant letters that Lady Ranelagh wrote while at Leighs are 2 September 1665 and 19 January 1666, though she may have stayed longer. See BL Add. MS 75354, fols. 50-52.

for private circulation, ends with two contemporary endorsements: ‘Theological Discourse Written during the last Pestilence in 1665’ and ‘The hand Lady Ranelaghs & I believe the composition too Hill’.¹⁴¹ Ruth Connolly has identified this as the only extant treatise by Lady Ranelagh and convincingly argues for its importance in our understanding of Ranelagh’s religious and political beliefs during the Restoration.¹⁴² The document offers some of the most solid evidence of Lady Ranelagh’s sympathy for nonconformists during the Restoration and her opposition to the Conventicle Act of 1664 which, according to her, imprisoned nonconformists in crowded plague-infested prisons that ‘were murdering holes to those whose offences are meeteing together to pray’.¹⁴³ The treatise develops some of the ideas she held in the previous decade, such as the need for a Protestant union based on the similarities between the different churches.¹⁴⁴

A further view of Lady Ranelagh’s providential outlook is found in a letter to her brother Robert in September 1666, shortly after the Great Fire had destroyed most of London. She explains:

I have since taken to myself the mortification of seeing the desolations, that God, in his just and dreadful judgment, has made in the poor city, which is thereby now turned indeed into a ruinous heap, and gave me the most amazing spectacle, that ever I beheld in my progress about and into this ruin. I dispensed your charity amongst some poor families and persons, that I found yet in the fields unhoused. Since then, Mr. Worsley has been with me, and given me very considerable particulars of providence¹⁴⁵

¹⁴¹ Royal Society Library, RB/1/14/4, fol. 42v.

¹⁴² On the discovery of this manuscript, see Ruth Connolly, ‘A Manuscript Treatise by Viscountess Ranelagh (1614-1691)’, *Notes and Queries*, 53 (2006), 170-72.

¹⁴³ Royal Society Library, RB/1/14/4, fol. 31r.

¹⁴⁴ Some of these letters from the previous decade stressed the need for Protestant unity in order to withstand the threat from Catholics in Ireland and continental Europe. For example, see HP 39/2/60A & HP 35/2/56-59. Also see the select translation by Patrick Little, ‘The New English in Europe, 1625-60’, in *Community in Early Modern Ireland*, ed. by Robert Amstrong and Tadhg Ó hAnnracháin (Dublin: Four Courts Press 2006), pp. 154-66 (p. 163).

¹⁴⁵ Lady Ranelagh to Robert Boyle, 12 September [1666], in *Correspondence of Boyle*, III, pp. 234-36.

Lady Ranelagh perceived the series of catastrophic events that hit London in a short period of time as proof of God's vengeance. As a pious gentlewoman, her role in the face of destruction was to distribute charity (which may have taken the form of food, medicine, or money) to those less fortunate, and this passage shows that she fulfilled this duty. The passage also provides evidence that her friendship with Worsley had continued after the Restoration.

During the 1660s, Lady Ranelagh became increasingly intimate with her old friend, the Lord Chancellor Edward Hyde, now Earl of Clarendon. Though the two certainly would have disagreed on some major political and religious matters, they both shared a critical view of Charles II's immoral court and opposed many elements in the series of laws passed from 1661 to 1665 to suppress the nonconformists.¹⁴⁶ Clarendon confided in Lady Ranelagh about national issues on a visit in April 1664, only one month before the Conventicles Act, 'An Act to prevent and suppress Seditious Conventicles', would pass.¹⁴⁷ From January to September 1666, when opposition to Clarendon was rising in Parliament, Lady Ranelagh wrote frequent updates on his situation in letters to her brother, Lord Burlington. By this time, Lady Ranelagh had been instrumental in arranging a marriage for Burlington's daughter, Henrietta, to Clarendon's son Laurence, later first Earl of Rochester; therefore, her brother had a personal interest in Clarendon's reputation and position.¹⁴⁸ Her letters detail Clarendon's downfall over this fateful year

¹⁴⁶ While the 1664 'Clarendon Code' was named after him, in reality Clarendon had been fighting against such harsh laws against nonconformists. See *ODNB* for 'Edward Hyde, first Earl of Clarendon (1609-1674)'.

¹⁴⁷ Chatsworth House, Cork MSS, Miscellaneous Box 5, fol. 10r. Journal of Elizabeth Clifford, Lady Burlington and Cork, 1650s-1688. The quotation is from the original pamphlet describing the act, reprinted in *Documents Relating to the Settlement of the Church of England by the Act of Uniformity of 1662*, ed. by George Gould (London: Kent, 1862), p. 477.

¹⁴⁸ Henrietta Boyle (1646-1687) married Laurence Hyde in (c.1642-1711) in 1665. Throughout the letters Lady Ranelagh wrote to her brother after visiting the Clarendon household, she would always give her

by weaving together decisions made in parliament, public opinion, and her own opinion about her close friend.

An example of Lady Ranelagh's independent thought and political influence may be found in a letter she wrote to her brother Burlington in January 1666. She explains that a case relating to a Mistress Roberts's estate would be taken to court next month, and that Clarendon would have the last say in this judgment.¹⁴⁹ The House of Lords had recommended that Mistress Roberts should be granted the estate, but Clarendon was hesitant because there was no precedent case. She explained the situation in detail to her brother and asked for his help:

For my part I assure my selfe hee wil doe w^{ts} just but they feare some bodys behaviour to him may not dispose him to be obligeing to ym & yt he may therefore rather incline to gratefie ye greater part of ye lawyers of England to dismise ym to ye Common law wch would be as ruinous to ym as his Judging ye Cause agast them & in yt poynt it is yt yr intercession is humbly begged & with ye more confidence because yu wil thereby but perfect an obligeing worke yu have already begun in speakeing to my Ld Chanclr for ym to whome yt you [would now?] either speake againe if yu see him time enough or write to him if you doe not to give it a final determination by his judgmt is earnestly begged for ym by ye hand of yr KR¹⁵⁰

This example demonstrates that Lady Ranelagh was involved in legal proceedings and used her relationships with friends and family to help influence important decisions. While she herself was sure that her friend Clarendon would make the right decision, she upheld her word that she would ask Burlington to speak to Clarendon on behalf of Mistress Roberts, 'a fayre Lady who acknowledge yu have already much obliged her'.

brother updates on Henrietta was acting gracefully and how she was loved by her new family. For example, see BL MS Add. 75354, fols. 97-98, Letter from Lady Ranelagh to Lord Burlington, 30 July [1667]; and BL MS Add. 75354, fols. 99-100, Letter from Lady Ranelagh to Lord Burlington, 8 August [1667].

¹⁴⁹ The identity of Mistress Roberts cannot be determined with any certainty, though she may be of some relation to Lady Ranelagh's friend, John Robertes.

¹⁵⁰ BL Add. MS 75354, fols. 53-54. Letter, Lady Ranelagh to Lord Burlington, 11 Jan. [1666].

The relationship between Clarendon and Lady Ranelagh, and the respect that he had for her, is shown by Lady Ranelagh's constant presence in Clarendon's household throughout his wife's sickness and death in 1667. On 8 August 1667, Lady Ranelagh says that she was 'sent for' during the afternoon to attend to Lady Clarendon, who had fallen very ill:

I came & found her just out of a Convulsion fit yt had taken her wth a [sritchig?] ye dutchess being by but stil in a very ill fit yt had almost quite taken away both her speech & sence, there being noe D^r present I ventured to give her something yt did a litle waken her & propesed to her Highness & My Ld Chamber ye having a consulte of ye best D^{rs} in towne sent for about hir wch they presently consented too & was accordingly donn, but hir fit continued al night & this morning apeared to be much of a Palsey & too like an Apoplexys: agast wch they apoynted her several remedys but nothing has wrought wch has left her case very hopeless in ye opinnion of ye D^{rs} yet I act by ye Proverbe yt says as long as there is life there is hope, & a large bottle of sperit of Hartshorne yt I procured has for some time by being held under her nose waked her¹⁵¹

In addition to evidencing the intimate relationship between the Clarendon family and Lady Ranelagh, this passage shows a complicated transmission of medical knowledge and authority which disrupts the assumption that women were the first port of call, but deferred to doctors when the situation escalated beyond their ability. Clarendon first called Lady Ranelagh, and she assessed the situation and decided that the 'best D[octo]rs' must be called. Once the doctors came, they tried a few remedies that failed and decided that the patient was beyond help. However, unlike the doctors, Lady Ranelagh's religious beliefs informed her medical ethics, and she could not give up if Lady Clarendon was still alive. She procured her own remedy, the Spirit of Hartshorn, which helped her patient.

¹⁵¹ BL Add. MS 75354, fols. 99r-100v. Letter, Lady Ranelagh to Lord Burlington, 8 August [1667].

Lady Ranelagh's dedication to Lady Clarendon's health continued until the latter finally passed away on 9 August 1667, and she wrote to her brother Cork the following day to describe the situation in detail:

I have binn very litle from Claringdon House, paying my last attendance to yt poore lady who never soe farr recovered yt fit I told you of yn til she dyed but continued it in without speech or sence ... nature being soe farr weakened as to be unable to worke together wth ye remedies yt D^{ts} had upon consulte agreed to give her. none of al wch had soe visible an operation as to wakening & rouseing her. as a large bottle of very quick sperit of harts horne yt I procured for her. held under her nose wch ye D^{ts} confesed was as proper as any thing yt could be used to her (& wch I giue yu notice of to invite yu to put yrselfe into a good stock of it for my Dst Sister use which now ye may doe, one yt I know having lately stilled it in good quantety & seling it for 5s an ounce. Half a point would be enough for yu at once wch was about wt we now had for this poore Lady)¹⁵²

Lady Ranelagh's critique of the doctors' treatment plan continues in this letter, where she maintains that her Spirit of Hartshorn was the most effective treatment. She then says that the doctors agreed with her (though perhaps somewhat hesitantly) that her remedy was a suitable choice, and she takes the opportunity to suggest it to her brother in his treatment for his own sick wife, telling him where he can find it and recommending the appropriate dose. As has been seen in her political views, Lady Ranelagh also maintained an independent outlook on matters related to medicine and health. She valued the opinions of accredited physicians, but trusted enough in her own knowledge to maintain her own decisions and to actively prescribe her own medical regimen.

While Lady Ranelagh often turned to her brothers for help with legal and political matters, such as her lawsuit against her husband, she had enough political influence and powerful connections to allow her to reciprocate the favour. In 1669 when the Commons impeached her brother Lord Orrery as Lord President of Munster on charges of High

¹⁵² BL Add. MS 75354, fols. 101r-105v. Letter, Lady Ranelagh to Lord Burlington, 10 August [1667].

Treason, Lady Ranelagh solicited help from all of her powerful connections. She passed on letters to Bulstrode Whitelocke (1605-1675) to ask his advice and opinion, after which he ‘studied the point, & sent his opinion upon the case under his hand that the Articles ag^t the E were not High Treason’.¹⁵³ She also arranged for a meeting at her house between herself, Lord Orrery, and ‘a Coll of his Ma^{ty}s Army’ in order ‘to get him [Lord Orrery] into some Employt for his age & circumstances’.¹⁵⁴ She did not limit her political influence to helping family members in trouble, for she also assisted her friends. For example, in a letter written ten years earlier in 1659 from Edward Hyde to James Butler (1610-1688), first Duke of Ormond, Hyde reminded the latter that he owed the protection he was enjoying to the influence of Lady Ranelagh.¹⁵⁵ Ormond remained a friend of Hyde after the Restoration when he became Earl of Clarendon, but he was an enemy of Lady Ranelagh’s brother Lord Orrery. However, her earlier assistance to Ormond in 1659 helped facilitate a settlement between him and her brother Orrery in the 1660s.¹⁵⁶ The Duke of Ormond later commented on Lady Ranelagh’s ‘influence on her family, which is great, even with her brother of Corke; as for the other branches she governs them very absolutely’.¹⁵⁷ This striking comment reveals a powerful woman who commanded the

¹⁵³ *The Diary of Bulstrode Whitelocke, 1605-1675*, ed. by Ruth Spalding (Oxford: Oxford University Press, 1990), p. 749. Bulstrode Whitelocke was a lawyer and politician who, during the civil wars, was active on behalf of the Parliamentarians to negotiate a peace settlement with Charles I. See *ODNB* entry for ‘Bulstrode Whitelocke, appointed Lord Whitelocke under the protectorate (1605-1675)’.

¹⁵⁴ West Sussex Record Office, Petworth House, Orrery MS 13219. Unpaginated. Undated Letter from Lady Ranelagh to the Countess of Orrery. There are two consecutive letters in this collection which refer to this meeting.

¹⁵⁵ Bodleian Library, Carte MS 30, fols. 484-86. Letter, Edward Hyde to Marquis of Ormonde, 25 Oct. 1659.

¹⁵⁶ Kathleen Lynch, *Roger Boyle, First Earl of Orrery* (Knoxville: University of Tennessee Press, 1965), p. 99. Lord Ormond became Lord Lieutenant of Ireland in 1644, but spent the Interregnum in exile with other Royalists. He returned to his post in 1662 and his harsh nonconformist policy landed him many enemies. See *ODNB* entry for ‘James Butler, first Duke of Ormond (1610-1688)’.

¹⁵⁷ Letter, Duke of Ormonde to Lord Arlington, 24 August 1681. *Calendar of the Manuscripts of the Marquess of Ormonde. K.P.*, 8 vols (London: His Majesty’s Stationary Office, 1895-1920), VI (1911), p. 138.

respect of those close to her, including her closest male relatives. While Ormond must have been exaggerating by saying ‘she governs them very absolutely’, this passage evidences how Lady Ranelagh’s strong personality could create resentment as well as respect.

One benefit of the Restoration for Lady Ranelagh was that Charles II had an interest in natural philosophy and patronised several schemes devised by many of her old friends. The most important achievement was the establishment of the Royal Society in 1660.¹⁵⁸ Her brother Robert was among the Founder Fellows, and some of her associates from the Hartlib Circle would also later be elected Fellows, including William Petty and Robert Wood. In 1668, Robert Boyle moved into Lady Ranelagh’s Pall Mall house and the two lived together for the final twenty-three years of their lives, allowing more time for Lady Ranelagh to encourage and nurture her brother’s scientific development. Though it has been thought that she was only tangentially connected to Boyle’s circle of scientific friends, many of her contemporaries noted in their diaries and letters that they dined with both Boyle and Ranelagh on their visits to the Pall Mall home. Lisa Jardine has established that Robert Hooke dined at Lady Ranelagh’s more than thirty times in the year 1677 — visits when Hooke not only met with Robert Boyle, but also with Lady Ranelagh.¹⁵⁹ For example, one entry in Hooke’s diary from 23 January 1678 states that he

¹⁵⁸ A more thorough discussion of how the founding of the Royal Society personally affected Lady Ranelagh, and women natural philosophers more generally, will be included in Chapter 3. For a discussion of the early years of the Royal Society, see Michael Hunter, *The Royal Society and its Fellows, 1660–1700: The Morphology of an Early Scientific Institution*, 2nd edn (Oxford: British Society for the History of Science, 1994). While the inaugural meeting of the Royal Society took place at Gresham College on 28 November 1660, it was not until 22 April 1663 that their First Charter passed the Great Seal. See R.E.W. Maddison, *The Life of the Honourable Robert Boyle* (London: Taylor & Francis, 1969), pp. 98–100.

¹⁵⁹ Lisa Jardine, *The Curious Life of Robert Hooke: The Man who Measured London* (London: Harper Perennial, 2003), p. 91.

was ‘At Mr. Boyles, spoke with him and Lady Ranalaugh about bookes’.¹⁶⁰ Further, Hooke stayed at Lady Ranelagh’s house when he travelled to London and she commissioned him to refurbish her Pall Mall house, including a laboratory for Robert’s use.¹⁶¹ She also remained a confidante of Henry Oldenburg, who became the first Secretary of the Royal Society, and of Benjamin Worsley, who continued pursuing many scientific schemes throughout the Restoration though he never became involved in the Royal Society. Worsley and Oldenburg both died around September 1677, a serious loss for both Lady Ranelagh and her brother. She was at her sister Warwick’s when she received the news, and she wrote to Robert Boyle about ‘the remove of our true honest ingenious friends’.¹⁶² She further explained that ‘my experience ... has taught me that its safer to have those uneasy things to us soe farr touched upon as to beget some vent for such sorrows rather than by smothering them within our selves to continue to us a longer exercise under them’. The suggestion of venting sorrows echoes Puritan doctrines for grieving in the early seventeenth century, where people, and especially women, were encouraged to find a balance between allowing themselves to mourn and silently accepting God’s will.¹⁶³ Indeed, she did have much ‘experience’ with death in the 1670s, as many of her family members had recently passed away, including her daughters Frances and Catherine.¹⁶⁴

¹⁶⁰ *The Diary of Robert Hooke 1672-1680*, ed. by Henry W. Robinson and Walter Adams (London: Wykeham, 1968), p. 341.

¹⁶¹ Jardine, *The Curious Life*, pp. 87 & 91.

¹⁶² Letter, Lady Ranelagh to Boyle, 11 Sep. [1677]. From the copy in *Correspondence of Boyle*, IV, pp. 454-55.

¹⁶³ Elizabeth Clarke, ‘A heart terrifying Sorrow’: the Deaths of Children in Seventeenth-Century Women’s Manuscript Journals’, in *Representations of Childhood Death*, ed. by Gillian Avery and Kimberley Reynolds (Basingstoke: Macmillan, 2000), pp. 65-86.

¹⁶⁴ Frances, her daughter who never married and lived with her throughout her adult life, died in Lady Ranelagh’s Pall Mall house on 28 March 1672. She was buried in the crypt at St. Martins-in-the-Fields, and Andrew Marvell wrote an epitaph for her which is included in both the folio edition of his works and on the

Throughout the 1670s, Lady Ranelagh continued advocating toleration for nonconformists and attended some of their meetings. As Ruth Connolly has explained, her particular branch of Protestantism is difficult to define. While she appears never to have formally left the Established church, she attended Presbyterian services and advocated the rights of other nonconformist groups, including Quakers and Baptists.¹⁶⁵ In January 1670, Bulstrode Whitelocke recalled dining with Col. William Kiffin at Lady Ranelagh's house, where they 'had private discourse about Liberty of Conscience, to wch she was a great friend'.¹⁶⁶ 'Liberty of Conscience' meant freedom for individuals to pursue their own form of worship and to not be forced to conform to the Established church religion. Her belief that liberty of conscience was 'one of the most unquestionable rights belonging to man as man' dates back to at least 1657, if not earlier.¹⁶⁷ By at least the mid-1670s, Lady Ranelagh was travelling to hear the eminent nonconformist minister Richard Baxter. In July 1676, she was listed as one of those attending conventicles 'About Holborn In great Russel street in new Southampton buildings', where Baxter was preaching.¹⁶⁸ Among other shared views, Lady Ranelagh would have been attracted by

tomb. There is no other known link between Marvell and Lady Ranelagh, but the two may have met at Milton's house. For the date of Frances's death, see Chatsworth House, Cork MSS, Miscellaneous Box 5, Journal of Elizabeth Clifford, Lady Burlington, fol. 16r. On Marvell's epitaph, see Hugh Brogan, 'Marvell's Epitaph on –' in *Renaissance Quarterly*, 32 (1979), 197-99, and see *The Poems of Andrew Marvell*, ed. by Nigel Smith (London: Pearson Longman, 2003), pp. 199-200. Her eldest daughter Catherine died three and a half years later on 8 October 1675. See the BL Add. MS 27354, Diary of Mary Rich, entry for 16 Oct 1675. More information on Lady Ranelagh's intellectual circle after the Restoration, with specific reference to her natural philosopher friends, will be offered in Chapter 3.

¹⁶⁵ Connolly, "'A Wise and Godly Sybilla'", p. 293.

¹⁶⁶ *Diary of Bulstrode Whitelocke*, pp. 750-751. William Kiffin (1616-1701) was a former friend of Oliver Cromwell and remained a nonconformist in London, and a major Baptists leader, after the Restoration. See entry for 'William Kiffin (1616-1701)' in the *ODNB*. Lady Ranelagh's relationship with Kiffin will be discussed further in Chapter 3.

¹⁶⁷ Royal Society Library, MS/1, fols. 190-194 (190v). 'Ex. Litt. M. Ra', *Liber Epistolaris*, [1657?]. For more on this subject, see Connolly, 'A Proselytising Protestant'.

¹⁶⁸ BL Egerton MS 3330, fols. 14-18 (16r). 'Notes of Coventicles &c. in Westminster &c. July 1676'. Quoted in Ruth Connolly, "'A Wise and Godly Sybilla'", p. 293. Connolly also makes reference to Mary Rich and Lady Ranelagh travelling to hear and to speak with Baxter in May 1677, but I could not find this reference in Rich's 'Diary'. See Connolly, "All Our Endeavours".

Baxter's active promotion of solidarity between different Protestant denominations, a cause that Lady Ranelagh had championed for decades.¹⁶⁹ In July 1675, she wrote to her brother Lord Burlington after receiving 'a letter from a good hand from ye Hague' that told her of 'the news of ye defeate given by ye Elector of Brandenburge to ye Swedish Army'.¹⁷⁰ After relaying a report of the Battle of Fehrbellin, she adds 'Its sad yt Protestants should thus distroy one another but since some of ym were to be killed its wel they fel who had taken his partty who has drenched all Europe (almost) in blood'.¹⁷¹

Lady Ranelagh's zealous religious mindset also made her a natural ally of John Eliot (1604-1690), who was working on converting to Protestantism the natives in the American colonies. Eliot had established many small conversion communities around Boston, called 'praying towns', where he trained the natives in English manners, provided them with a Bible translated into the Algonquin tongue, and taught them the basic ethics of Christianity.¹⁷² However, after the outbreak of King Philip's War in 1675, a war between natives and white colonists, the Massachusetts Council turned against all natives and in October 1675 it ordered Eliot's Christian converts to be contained on Deer Island in Boston Harbour.¹⁷³ When Eliot visited them, he wrote to his friends in England about their appalling conditions, with many dying of starvation, cold and sickness. Roughly half of the Christian Indians died or were captured to be sold in the slave trade over the winter of 1675-76. When the war ended in May 1676, the remaining Indians

¹⁶⁹ For a summary of Baxter's religious views before and after the Restoration, see *ODNB* entry for 'Richard Baxter (1615-1691)'.

¹⁷⁰ BL Add. MS 75354, fols. 115-117 (fol. 115v). Letter, Lady Ranelagh to Lord Burlington, 3 July [1675].

¹⁷¹ BL Add. MS 75354, fols. 115-117. Letter, Lady Ranelagh to Lord Burlington, 3 July [1675]. The Battle of Fehrbellin took place on 28 June 1675, and was a victory for Frederick William, Elector of Brandenburg (1620-1688).

¹⁷² See *ODNB* entry for 'John Eliot [called the Apostle to the Indians] (1604-1690)'.

¹⁷³ Jill Lepore, *The Name of War: King Philip's War and the Origins of American Identity* (New York: Knopf, 1998).

were allowed to return to Massachusetts. After having survived the harsh winter without adequate food or shelter, the natives were in poor health. Eliot wrote about these atrocities to both Robert Boyle and Lady Ranelagh in separate letters.¹⁷⁴

In August 1676, Lady Ranelagh replied to Eliot about ‘ye trials & sufferings of yr poore praying Indians’, saying she was ‘glad they are now off ye Island of their distresses’.¹⁷⁵ Her letter is critical of the colonists’ actions because she believed that those in power should be responsible for upholding Christian principles if they expected ‘those under power’ to follow. She also offered medical advice for Eliot’s care for the natives, saying ‘We here find bleeding excelent good to prevent coughs from growing to a dangerous height. ye lord direct yu to ye best meanes for yr sick & make himselfe ye great Phisitian to Cure all yr distempers’. The letter shows that she was concerned with the political as well as philanthropic aspects of events taking place in the American colonies, and that she was sympathetic to Eliot’s mission. As Jill Lepore has shown, ‘Outside of [Daniel] Gookin and [John] Eliot ... there was little sympathy for the plight of the Indians confined to Deer Island. Not a few colonists believed confinement was too good a treatment for Indians, Christian or not’.¹⁷⁶ Lady Ranelagh’s letter places her among a select group of people in American history who sympathised with and offered medical care to the indigenous people confined to Deer Ireland.

While consistently sympathetic to Protestants of all kinds, Lady Ranelagh had been vehemently anti-Catholic throughout her life. However, her letters and activities of the early 1680s suggest she was becoming less interested in repressing Irish Catholics

¹⁷⁴ These letters are no longer extant, but Lady Ranelagh’s letter of 13 Aug. 1676 mentions at least two previous letters by Eliot: one to Boyle and one to her. See Royal Society Library, Boyle Letters, Vol. 1, fols. 17-18. Letter, Lady Ranelagh to John Eliot, 13 Aug. 1676.

¹⁷⁵ Royal Society Library, RB/3/5/9, fols. 17-18. Letter, Lady Ranelagh to John Eliot, 13 Aug. 1676.

¹⁷⁶ Lepore, *Name of War*, p. 139.

and had turned toward methods of conversion and evangelism. One example of this change may be found in her activities in 1682, when she assisted her brother Robert in his project to produce an Irish vernacular translation of the Bible.¹⁷⁷ From January to April 1682, Lady Ranelagh corresponded with Anthony Dopping, bishop of Meath (1643-97), about the benefits of translating the Bible into Irish as a way of converting the misguided Catholics.¹⁷⁸ She felt that the ‘poore Irish’ lacked the “‘spiritual advantages which God’s providence’ had provided to the ‘English Protestants’”.¹⁷⁹ Boyle’s project received a range of responses, with the angriest critique coming from Edward Wolley, bishop of Clonfert, who argued that the translation was not permitted under the Act of Uniformity.¹⁸⁰ Wolley thought that Irish Catholics were savages beyond help, a belief that may not have always been so foreign to Lady Ranelagh.¹⁸¹ However, her involvement in the project shows a progression in her thought: while still anti-Catholic and critical of the state of Ireland and its people, she now thought that the problems stemmed from misguidance and lack of access to education. This short period of relative tolerance toward Catholics may have been a result of the times, for the Catholic threat

¹⁷⁷ Robert Boyle funded John Eliot’s translation of the Bible and had also been involved in Robert Thompson’s translation into the Malay language. See Michael Hunter, ‘Robert Boyle, Narcissus Marsh and the Anglo-Irish Intellectual Scene in the Late-Seventeenth Century’, in *The Making of Marsh’s Library: Learning, Politics and Religion in Ireland, 1650-1750*, ed. by Muriel McCarthy and Ann Simmons (Dublin: Four Courts Press, 2004), pp. 51-75.

¹⁷⁸ Betsey Taylor Fitzsimon, ‘Conversion, the Bible and the Irish Language: The Correspondence of Lady Ranelagh and Bishop Dopping’, in *Converts and Conversion in Ireland, 1650–1850*, ed. by Michael Brown, Charles Ivar McGrath, and Thomas P. Power (Dublin: Four Courts Press: 2005), pp. 157-82. There are three volumes of Dopping papers. See Armagh Public Library, MS 26544.

¹⁷⁹ Fitzsimon, ‘Conversion’, p. 170.

¹⁸⁰ Fitzsimon, ‘Conversion’, pp. 173-75. Wolley refers to the ‘Act of Conformity’, but he must be referring to the Act of Uniformity (1662).

¹⁸¹ It is uncertain exactly how she felt about the Irish Catholics earlier in life, but there are many hateful references to them in the letters to her family. For example, one undated letter to her sister-in-law Lady Orrery explains the cruel and cowardly behaviour of the Irish Army against ‘ye poore protestant English’. See West Sussex Record Office, Petworth House, Orrery MS 13219, Letter 14. [Undated, but must date post-1660 because of the Orrery title.] In a letter to her brother the Earl of Cork, she referred to Ireland as ‘but poore trash’. See Chatsworth Estate, Corke MSS, Box 31, Letter 50, Letter from Lady Ranelagh to the Earl of Cork, 20 July 1659.

under James II would soon renew her anti-Irish and anti-Catholic sentiment.¹⁸² In letters written during the Siege of Limerick in 1690, she strongly supported William's invasion and expressed her disgust at 'ye Irish cruelty'.¹⁸³

Final Years: 1685-1691

The accession of James II in 1685 soon brought toleration for nonconformists, but it also renewed national hysteria over the popish threat. Within Lady Ranelagh's Anglo-Irish circle, James's accession fed hopes of rebuilding Ireland, for the new king was a long-standing patron of Sir William Petty. During the first two years of James's reign, Petty prepared many proposals for submission to him.¹⁸⁴ He also published in manuscript several treatises and proposals defending the land settlement in Ireland, and he passed at least one of these to Lady Ranelagh for comment.¹⁸⁵ This document, known as '*Speculum Hiberniae*', is a reply to the G.F.D's *Twelve Queries* (1685) and Nicholas French's *Narrative of the Settlement and Sales of Ireland* (1668), which Petty published in manuscript in 1686. It takes the form of a history of the Irish rebellion and Catholic Confederacy with the aim of defending the Protestant settlements in Ireland.¹⁸⁶ The treatise begins with a list of twenty-two potential supporters, in which Lady Ranelagh is

¹⁸² While her anxieties about Catholics may have been aggravated by scares of the Popish Plot at the end of the 1670s, she appears to have resolved these fears by the early 1680s. For her reaction to the Popish Plot, see West Sussex Record Office, Petworth House, Orrery MS 13219, Letter 7, Lady Ranelagh to Countess of Orrery, 23 June [1678], in which she speaks of 'a horrid Plot to Murder his Majt & his Highness wch most wonder at it being agast ye Interest of al but ye Papists'. She suggests that 'if it be made out noe punishmt can be too severe for such vilaines'.

¹⁸³ National Archives of Scotland, GD 45/14/237/1-5, fol. 3. Letter, Lady Ranelagh to Countess of Panmure, 9 August 1690.

¹⁸⁴ See *ODNB* entry for 'Sir William Petty (1623-1687)'.

¹⁸⁵ Ted McCormick, *William Petty and the Ambitions of Political Arithmetic* (Oxford University Press, 2009), Chs. 6 and 7.

¹⁸⁶ '*Speculum Hiberniae*' is BL Add. MS 72884, fols. 1-54. It is one of many such papers in BL Add. MSS 72883-84 that defends the Restoration land settlement. Ted McCormick, personal email communication, 1 July 2009.

the only woman named. The others named include some of James II's most loyal supporters in 1686, including Edward Hyde's two sons, Laurence Hyde, 1st Earl of Rochester (c.1642-1711), and Henry Hyde, 2nd Earl of Clarendon (1638-1709); Sir William Coventry (c.1627-1686); and Sir Edward Herbert (1645-1698).¹⁸⁷ When Petty was preparing this manuscript, he sent it to Lady Ranelagh and asked her to 'shew them onely to the true friends of the King and Church of England & Emprovement of Ireland'.¹⁸⁸ She replied to him with the promise that she would 'make noe Ill use of it & if I can carry it on to a good accompt yu shal heare it, & however it shal god wiling be faithfully returned to yu'.¹⁸⁹ Presumably, Petty turned to his old friend because he knew of both her investment in the Irish settlement and the range of influential contacts she held.

However, this period of optimism at the beginning of James's reign was very brief, as in 1687 he began replacing Protestant officers with Catholics. Many of Lady Ranelagh's friends were displaced, and Anglo-Irish Protestants began to fear that they might lose their Irish lands to Catholics.¹⁹⁰ Though it appears that Lady Ranelagh supported James at the beginning of his reign, this probably dissipated quickly. Germaine Greer and Selina Hastings have noted that Lady Ranelagh maintained a 'circle of Whig intelligentsia' in the mid- to late-1680s, which included the lawyer William Atwood (d. 1712); George Savile, Lord Halifax (1633-1695); the poet Edmund Waller (1606-1687), and her brother Robert Boyle.¹⁹¹ We do not know how Lady Ranelagh felt about James

¹⁸⁷ BL Add. MS 72884, fol. 3v. Of further interest is that 'Lord Tyrconnel' and 'Lord Ormonde' are also on this list, creating a diverse group of individuals. Perhaps the only thing they had in common was a shared interest in the Irish settlement.

¹⁸⁸ BL Add. MS 72884, fol. 4. Undated Letter, William Petty to Lady Ranelagh.

¹⁸⁹ BL Add. MS 72884, fol. 5. Undated Letter, William Petty to Lady Ranelagh.

¹⁹⁰ For more on James II and his relationship with Ireland, see W. A. Speck, *James II* (London: Longman, Pearson, 2002), esp. pp. 101-16.

¹⁹¹ *The Surviving Works of Anne Wharton*, ed. by G. Greer and S. Hastings (Essex: Stump Cross Books, 1997), p. 84.

II's overthrow in 1688, but by August 1690, when William III was waging war on the Jacobite strongholds in Ireland, Lady Ranelagh firmly sided with the new king.¹⁹² Her letters written during the Siege of Limerick in August 1690 to Margaret Hamilton, Countess of Panmure, and to Margaret's mother Anne Hamilton, Duchess of Hamilton (1632-1716), are unequivocally supportive of William, saying 'we hope yt god wil yet deliver & make him victorious there'.¹⁹³

After William and Mary secured the throne of England, Lady Ranelagh must have welcomed the new climate of religious toleration for all Protestants. However, regardless of her personal political beliefs, she characteristically maintained friendships with significant Jacobites as well as Williamites. She was associated with the three politicians who had led the opposition to William of Orange taking the throne in January 1689: Henry Hyde, 2nd Earl of Clarendon (1638-1709); Laurence Hyde, Earl of Rochester; and Daniel Finch, 2nd Earl of Nottingham (1647-1730). The Hyde brothers were relatives through marriage, and the political divisions within her family must have reinforced her general inclination to maintain good personal relations with people of all parties.¹⁹⁴ When Clarendon was arrested for treason in June 1690 and spent nearly two months in the Tower of London, their mutual friend Gilbert Burnet suggested to Lady Ranelagh that

¹⁹² For more on William's invasion of Ireland, see Richard Doherty, *The Williamite War in Ireland 1688-1691* (Dublin: Four Courts Press, 1998).

¹⁹³ Letter, Lady Ranelagh to the Countess of Hamilton, 6 Aug. 1690, National Archives of Scotland, GD/406/1/3797. Also see letters to the Countess of Panmure, National Archives of Scotland, GD 45/14/237/1-5. Margaret Hamilton was married to James Maule, 4th Earl of Panmure (1659-1723), who refused to honour William and Mary and never again sat in Parliament after they took the throne. However, Margaret's parents were William and Anne Hamilton, 3rd Duke and Duchess of Hamilton, who held a prominent place in William's administration due to their Scottish nobility. Since she came from a politically divided family, the Countess of Panmure's political leanings are unknown; however, Lady Ranelagh talks to her as a fellow Williamite. The Duchess of Hamilton was also an old friend of Gilbert Burnet, which may be how she came to know Lady Ranelagh. See the *ODNB* entries for 'James Maule, fourth Earl of Panmure (1658/9-1723)' and 'Gilbert Burnet (1643-1715)'.

¹⁹⁴ As previously mentioned, Laurence Hyde was married to Lady Ranelagh's niece, Henrietta Boyle, the daughter of Richard Boyle, Earl of Cork and Burlington.

Clarendon could benefit from a petition to the Queen and Council.¹⁹⁵ Clarendon's wife and his brother Lord Rochester prepared the petition and Lady Ranelagh agreed to deliver it to her old friend Lord Nottingham, who was now a Secretary of State under the new administration; she 'promised to recommend it effectually to [him]'.¹⁹⁶ Though Nottingham did not deliver the petition as he had promised, Clarendon was eventually released on bail on 15 August 1690, and his first visit the following morning was to Lady Ranelagh.¹⁹⁷

Among her Williamite friends were William Cavendish, first Duke of Devonshire (1641-1707) — a member of the Privy Council — and Lady Rachel Russell (c.1637-1723) — an avid letter-writer and active Whig whose husband, William, Lord Russell (1639-1683), had been executed for treason under Charles II.¹⁹⁸ In 1690, when Lady Rachel Russell was seeking a political position for her friend Sir Francis Wingate, she wrote to Lady Ranelagh to see if she could convince their mutual friend, the Duke of Devonshire, to help him. Lady Russell pleaded, 'I can ask no more than when you see Lord Devonshire to mention the thing to him, and your wishes in it; and if you think fit, as a thing you know I offer'd to him, from my Lord Bedford, and my own account; tho' I know there will not want that to enforce, when he knows your will in it, I know so well his respect to your Ladyship'.¹⁹⁹ Lady Russell then wrote directly to Lord Devonshire and

¹⁹⁵ *The Correspondence of Henry Hyde, Earl of Clarendon, and of this Brother, Laurence Hyde, Earl of Rochester; with the Diary of Lord Clarendon from 1687-1690*, ed. by Samuel Weller Singer, 2 vols (London: Colburn, 1828), II, pp. 324-25.

¹⁹⁶ *Correspondence of Henry Hyde*, II, p. 325.

¹⁹⁷ *Correspondence of Henry Hyde*, II, pp. 327-39.

¹⁹⁸ The Duke of Devonshire was instrumental in engendering the revolution of 1688, and was richly rewarded by the new government. He was also a good friend of William Russell, the executed husband of Rachel Russell. See *ODNB* entries for 'William Cavendish, first Duke of Devonshire (1641-1707) and 'William Russell, Lord Russell [called the Patriot, the Martyr] (1639-1683)'.

¹⁹⁹ *The Letters of Lady Rachel Russell: From the Manuscript in the Library at Wooburn Abbey*. (London: Dilly, 1792), pp. 507-09 (p. 508).

told him ‘My Lady Ranelagh will, I guess, let you see she is engaged in this matter, which I will say no more in; but if it is in your Lordship’s way to do him the courtesey I shall be glad’.²⁰⁰ Lady Ranelagh remained active in politics until her final days. John Evelyn records that he visited ‘Mr. Boyle and Lady Ranelagh his sister’ on 18 June 1690, at which point she was 76 years old, and they discussed religion and foreign affairs.²⁰¹

In addition to politics and religion, the other subject to which Lady Ranelagh remained dedicated until her death was medicine. Although medicine had seen rapid developments over the course of the seventeenth century, Lady Ranelagh kept abreast of current trends and always maintained associations with the best doctors of the era. By the 1690s, she knew the surgeon and physician Sir Edmund King (c.1630-1709), who had attended to Charles II during his final illness.²⁰² King is best remembered for his work with early blood transfusions and he shared many associates with Lady Ranelagh, including Thomas Willis, Robert Boyle, Dr Richard Lower, and Gilbert Sheldon, Archbishop of Canterbury.²⁰³ When the Countess of Panmure was ill and had received some medication from Sir Edmund King that was not helping, she wrote to Lady Ranelagh to ask for her advice and to see if Lady Ranelagh would discuss this with him. Lady Ranelagh replied with her characteristic independence, beginning with proper deference to medical authorities, but then adding her own advice on the frequency of the

²⁰⁰ *Letters of Lady Rachel Russell*, pp. 509-10 (p. 510).

²⁰¹ *The Diary of John Evelyn*, ed. by E. S. De Beer, 6 vols (Oxford: Clarendon Press, 1651; repr. 2000), V, p. 26.

²⁰² Lady Ranelagh’s letters to the Countess of Panmure and Duchess of Hamilton both mention conversations with Sir Edmund King in 1690 and 1691. See National Archives of Scotland, GD/406/1/3797 and GD 45/14/237/1-5.

²⁰³ All of Lady Ranelagh’s relationships with these men have already been mentioned except that with Dr Lower, which is evidenced in a correspondence between Lady Ranelagh and Lady Orrery in an undated fragment of a letter written in Lady Orrery’s hand. See West Sussex Record Office, Petworth House, Orrery MS 13219.

dose.²⁰⁴ Her commitment to helping her ill friends and family members could not even be stopped by her own illness. Her last extant letter is addressed to the Countess of Panmure about the latter's illness, though it is not in Lady Ranelagh's hand. The letter begins with Lady Ranelagh apologising that, 'my abundantly increased decays both in sight & strength disable me from doing it with my own hand'.²⁰⁵ Through her dictation to an unknown amanuensis, Lady Ranelagh relayed Sir Edmund King's advice to her friend.

On 23 December 1691, Lady Ranelagh died, predeceasing her brother Robert by exactly one week. Robert had named Lady Ranelagh as an executor of his will, and she is the first person named in his list of beneficiaries. In addition to bequeathing to her a ring that she should wear in remembrance of him, he also intended to give to her 'all my manuscripts and collections of receipts, whether of my own handwriting, or others ... beseeching her to have a care, that they or any of them come not to the hands or perusal of any, to whom she thinks, that if I were alive, I should be unwilling to have them communicated'.²⁰⁶ Boyle's 'receipts' are his medical recipes, as his minerals, chymical papers, and scientific instruments were bequeathed to his friends in the Royal Society. By offering these recipes to her and saying that she would know to whom she could disclose them, Boyle implies that the two shared an interest in collecting medical recipes and had a tacit understanding of their shared medical network until the end of their lives.

At the funeral of Robert Boyle, his and Lady Ranelagh's long-time friend Gilbert Burnet delivered a lengthy eulogy for the siblings which was characteristic of his flowery elocution. He began talking about Lady Ranelagh with some modesty, saying that some

²⁰⁴ Letters, Lady Ranelagh to Countess of Panmure, 31 July 1690 and undated. National Archives of Scotland, GD 45/14/237/1-2.

²⁰⁵ Letter, Lady Ranelagh to Countess of Panmure, 7 June [1691]. National Archives of Scotland, GD 45/14/237/5.

²⁰⁶ Birch, *Works of the Honourable Robert Boyle*, I, p. clix.

of her friends tried to ‘restrain’ him from remembering her, but then deduced that ‘since I was not so [restrained] by her self, I must give a little vent’ to his sister.²⁰⁷ His description is one of the most famous depictions of Lady Ranelagh, and it is worth relating in full because it enhances our understanding of her extraordinary achievements and esteemed reputation:

She lived the longest on the publicest Scene, she made the greatest Figure in all the Revolutions of these Kingdoms for above fifty Years, of any Woman of our Age. She imployed it all for doing good to others, in which she laid out her Time, her Interest, and her Estate, with the greatest Zeal and the most Success that I have ever known. She was indefatigable as well as dextrous in it: and as her great Understanding, and the vast Esteem she was in, made all Persons in their several turns of Greatness, desire and value her Friendship; so she gave her self a clear Title to imploy her Interest with them for the Service of others, by this that she never made any use of it to any End or Design of her own. She was contented with what she had; and though she was twice stript of it, she never moved on her own account, but was the general Intercessor for all Persons of Merit, or in want: This had in her the better Grace, and was both more Christian and more effectual, because it was not limited within any narrow Compass of Parties or Relations. When any Party was down, she had Credit and Zeal enough to serve them, and she employed that so effectually, that in the next Turn she had a new stock of Credit, which she laid out wholly in that Labour of Love, in which she spent her Life: and though some particular Opinions might shut her up in a divided Communion, yet her Soul was never of a Party: She divided her Charities and Friendships both, her Esteem as well as her Bounty, with the truest Regard to Merit, and her own Obligations, without any Difference, made upon the Account of Opinion. She had with a vast Reach both of Knowledge and Apprehensions, an universal Affability and Easiness of Access, a Humility that descended to the meanest Persons and Concerns, an obliging Kindness and Readiness to advise those who had no occasion for any further Assistance from her; and with all these and many more excellent Qualities, she had the deepest Sense of Religion, and the most constant turning of her Thoughts and Discourses that way, that has been perhaps in our Age. Such a *Sister* became such a *Brother*.²⁰⁸

Like his eulogy for Robert Boyle, Burnet’s memorial to Lady Ranelagh is a laudatory portrait that shows an exemplary woman of piety and charity.²⁰⁹ While one must factor in

²⁰⁷ Gilbert Burnet, *A Sermon Preached at the Funeral of the Honorable Robert Boyle* (London, 1692), p. 32.

²⁰⁸ Burnet, *A Sermon*, pp. 33-34.

the flattery inherent in any eulogy, and particularly those by Burnet, this remembrance offers insight into Lady Ranelagh's reputation, and it elaborates upon the image presented thus far. Lady Ranelagh was one of the most widely admired and influential women of the seventeenth century and had the amazing ability to maintain a public profile under each successive ruler. She maintained friendships with and helped those who disagreed with her political ideology and was either a member of or associated with the leading intellectual groups of her day. Her religious devotion led her to research subjects that were both charitable and intellectually rigorous, such as learning Hebrew and keeping abreast of innovations in medicine. The next chapter will consider in more detail how her varied interests overlapped and prompted her to promote social reform during the Civil Wars and Interregnum through her association with the Hartlib Circle.

²⁰⁹ Michael Hunter discusses this sermon in relation to Boyle's biography in 'Robert Boyle and the Dilemma of Biography in the Age of the Scientific Revolution', in *Robert Boyle, 1627-1691: Scrupulosity and Science*, pp. 251-68.

Chapter 2: Lady Ranelagh and the Hartlib Circle

(c. 1642-1660)

Lady Ranelagh's *ODNB* entry gives her position as a 'noblewoman associated with the Hartlib Circle', but details of the extent and nature of her participation have never been fully documented.¹ Her association with the Hartlib Circle has long been known, though she is referred to most often as 'Hartlib's patroness'.² Yet with a careful combing of the Hartlib Papers archive, Lady Ranelagh's name surfaces nearly two hundred times, and these entries reveal that she played a much more active role than has been previously suggested.³ Recent research, the most important being a chapter in Carol Pal's unpublished doctoral thesis, has begun to fill this historical void by offering introductory overviews of her participation;⁴ however, thus far there have not been any detailed studies of specific aspects of Lady Ranelagh's Hartlibian activities, as there are on other members of the Circle.

This chapter elaborates on Pal's introduction by offering an in-depth study of one subject to which Lady Ranelagh dedicated herself during her years in the Hartlib Circle: natural philosophy. While Pal's foundational study is essential for identifying many of the key members of the Circle with whom Lady Ranelagh corresponded on matters such

¹ See entry for 'Katherine Jones, Viscountess Ranelagh (1615-1691)' in the *ODNB*.

² William Eamon, *Science and the Secrets of Nature: Books of Secrets in Medieval and Early Modern Culture* (Princeton: Princeton University Press, 1994), p. 330.

³ I have compiled a spreadsheet that records each mention of Lady Ranelagh in the Hartlib Papers archive. This includes references that are obviously to her, but do not refer to her by name (e.g. 'my lady'). Similar spreadsheets have been compiled by Carol Pal and Betsey Taylor Fitzsimon. Though the three of us have not compiled a definitive spreadsheet, each of our final counts is around 185 references.

⁴ Carol Pal, 'Republic of Women: Rethinking the Republic of Letters, 1630-1680', 2 vols (unpublished doctoral thesis, Stanford University, 2006), I, Ch. 4.

as medicine and politics, she does not address the letters in which Lady Ranelagh's name is associated with a wide range of natural philosophical projects, which include such diverse subjects as chymistry, horticulture and optics.⁵ Pal categorised Lady Ranelagh's Hartlibian activities as 'political negotiations, medical information and religious correspondence', to which we should add natural philosophy.⁶ Scholars' tendency to focus on Lady Ranelagh's politics, religion and medicine has somewhat skewed the larger picture of her involvement with the Hartlib Circle and her range of intellectual interests during the interregnum. For example, while previous studies have noted most of Lady Ranelagh's closest associates, it is striking that her friendship with Henry Oldenburg is missing from every account. The Hartlib Papers also provide the most solid evidence to be found in any of Lady Ranelagh's extant manuscripts of her participation in sophisticated debates on a range of natural philosophical topics which feminist scholars, such as Lynette Hunter, have hitherto only been able to infer on the basis of circumstantial indications.⁷

By focusing on newly discovered documents, I hope to achieve two main goals. First, I will identify the main members of the Hartlib Circle with whom Lady Ranelagh corresponded on matters of natural philosophy, and use their correspondence to evidence the breadth of her knowledge. Second, this chapter will analyse the discourse of secrecy among members of the Hartlib Circle when discussing matters of natural philosophy, which runs counter to their professed commitment to the open communication of knowledge. This discourse will be placed within a framework of two competing

⁵ For a definition of 'chymistry', see 'Definitions and Conventions', above.

⁶ Pal, 'Republic of Women', I, p. 381.

⁷ Lynette Hunter, 'Sister of the Royal Society: The Circle of Katherine Jones, Lady Ranelagh', in *Women, Science and Medicine 1500-1700*, ed. by Lynette Hunter and Sarah Hutton (Stroud, Gloucestershire: Sutton, 1997), pp. 178-97.

ideologies — Baconian openness and hermetic secrecy — to show how and why Lady Ranelagh defined her boundaries when discussing natural philosophy.

Lady Ranelagh and the Hartlib Circle: An Overview

The intellectual correspondence network now known as the ‘Hartlib Circle’ began in London in 1641 and centred around ‘three foreigners’ — Samuel Hartlib,⁸ John Dury,⁹ and Jan Amos Kaminski (Comenius).¹⁰ In March 1642, the three signed a pact ‘concerning what ought to be promoted in the public good for the mutual edification of Christianity’.¹¹ They then began exploiting their impressive range of contacts to establish an international ‘republic of letters’ that spanned continental Europe, England, Ireland, and the American colonies. Hartlib employed scriveners and translators to copy important letters and treatises that would be circulated to this wide international audience. In England, the group included such well-known figures as John Milton, Robert Boyle, and Henry Oldenburg. The kaleidoscopic assortment of topics discussed within the letters included educational reform, chymistry, medicine, the ‘improvement’ of Ireland,

⁸ The term ‘three foreigners’ comes from Hugh Trevor-Roper, ‘Three Foreigners: The Philosophers of the Puritan Revolution’, in *Religion, the Reformation, and Social Change*, 3rd edn (London: Macmillan, 1967; London: Secker & Warburg, 1984), pp. 237-93. Born in Elbing and displaced by the Thirty Years War, Samuel Hartlib (c.1600-1662) moved to England in 1628 and lived there for the remainder of his life. In 1631, Hartlib moved from Chichester to Duke’s Place, London, where he resided until 1650. It was here in the 1630s that Hartlib began his ‘manuscript newsletter service ... providing international intelligence to the protestant (mainly puritan) English political elite that had become alienated from the Stuart court’. See entry for ‘Samuel Hartlib (c.1600-1662)’ in *ODNB*.

⁹ The Scotsman John Dury (1596-1680) grew up in an exile community in Leiden. In 1627 he moved to Elbing where he met Hartlib and Comenius. He then spent the next fifty years of his life striving to establish religious peace in the world. See J. Minton Batten, *John Dury: Advocate of Christian Reunion* (Chicago: University of Chicago Press, 1944).

¹⁰ Born in the Kingdom of Bohemia, Comenius (1592-1670) became the last bishop of the Moravian Brethren church. He maintained an international correspondence with Hartlib, which began in the early 1630s, and published widely on educational reform. See G.H. Turnbull, *Hartlib, Dury and Comenius: Gleanings from Hartlib’s Papers* (London: Hodder & Astoughton, 1947).

¹¹ The pact is dated 3/13 March 1642 and may be found in Turnbull, *Hartlib, Dury and Comenius*, pp. 460-61.

religious conversion, universal language, politics, theological questions and bee-keeping. Mark Greengrass has appropriately described the Hartlib Circle as ‘a diverse and self-selecting group of enthusiasts or “ingénui”, whose interests in the possibilities of technical change were supported by a shared viewpoint in ... [the] potential of free and “real” knowledge to benefit the commonwealth’.¹²

The huge number of extant manuscripts associated with the Hartlib Circle makes the Hartlib Papers archive, now held at the University of Sheffield, one of the most fruitful places to begin reconstructing an intellectual network based in and around London during the tumultuous years *circa* 1640-60. G.H. Turnbull provided the first substantial account of the Hartlib Circle in 1947, and it still proves useful today.¹³ Turnbull’s study was the first overview of the archive and offered a detailed account of the group’s three key members. Over the past sixty years, scholarship has expanded to include studies of many other members of the Circle, both central figures and those on the periphery. Members such as John Beale, Benjamin Worsley and George Starkey are finally receiving the scholarly attention they deserve and have now been established as key members of the Circle.¹⁴

While the past three decades have produced some exploratory accounts of Lady Ranelagh’s relationship to the Hartlib Circle, most of these articles only name her key correspondents and state the need for a more detailed study. History of science essays

¹² See entry for ‘Samuel Hartlib (c.1600-1662)’ in the *ODNB*.

¹³ Turnbull, *Hartlib, Dury and Comenius*.

¹⁴ Essays on each of these men can be found in the collection *Samuel Hartlib & Universal Reformation: Studies in Intellectual Communication*, ed. by Mark Greengrass, Michael Leslie, and Timothy Raylor (Cambridge: Cambridge University Press, 2002). For a biographical introduction to Benjamin Worsley, see Chapter 1 above. John Beale will be introduced more extensively later in this chapter. Born in Bermuda in 1628, George Starkey studied at Harvard. He emigrated to London in 1650, where he died in 1665. He was a prominent iatrochemist and was an active correspondent on various chymical subjects in the Hartlib Circle. See William R. Newman, ‘George Starkey and the Selling of Secrets’, in *Samuel Hartlib and Universal Reformation*, pp. 193-210.

still reference Charles Webster's *The Great Instauration* as a source for further information on Lady Ranelagh, but his account is brief and was never intended to be the definitive source on her relationship with the Circle.¹⁵ Many articles in the excellent essay collection *Samuel Hartlib and Universal Reformation: Studies in Intellectual Communication* also mention Lady Ranelagh, though she is invoked only when relevant to other discussions and is never placed as a focal point.¹⁶ More recently, Lynette Hunter has published a helpful introduction to Lady Ranelagh's role as a medical practitioner in her community — an essay that touches upon her involvement with the Hartlib Circle but serves primarily as an introduction to her life as a whole.¹⁷ Sarah Hutton's *ODNB* entry offers a brief overview of Lady Ranelagh's Hartlibian activities and provides a list of those members of the Circle with whom she was most closely acquainted: Samuel Hartlib, Sir Cheney Culpeper, John Dury, John Beale, Benjamin Worsley, Robert Wood, William Petty, Gerard and Arnold Boate, and Theodore Haak.¹⁸ It is only a brief biographical entry, however, and an expansion of Hutton's account would clearly provide a better understanding Lady Ranelagh's role in this collective.

Carol Pal has recently made the first serious contribution towards identifying the full extent of Lady Ranelagh's involvement in the Hartlib Circle. She describes Lady Ranelagh as an active collaborator in Samuel Hartlib's initial plans in the early 1640s and

¹⁵ Charles Webster, *The Great Instauration: Science, Medicine and Reform 1626-1660* (London: Duckworth, 1975), pp. 62-65, 86, 220, 308, 419, 433, 501.

¹⁶ Mark Greengrass, Michael Leslie and Timothy Raylor, *Samuel Hartlib & Universal Reformation: Studies in Intellectual Communication* (Cambridge: Cambridge University Press, 1994). Many of the essays on individual members will be referenced throughout this chapter.

¹⁷ Lynette Hunter, 'Sister of the Royal Society'.

¹⁸ See Chapter 1 for brief biographies of Sir Cheney Culpeper, Robert Wood and William Petty. The brothers Gerard and Arnold Boate were Dutch physicians involved in the Hartlib Circle's project for a natural history of Ireland. See Patricia Coughlan, 'Natural History and Historical Nature: The Project for a Natural History of Ireland', in *Samuel Hartlib and University Reformation*, pp. 298-317. Theodore Haak was a linguist and natural philosopher who was associated with the Hartlib Circle from the beginning of its formation. He later became a Founder Fellow of the Royal Society. See entry for 'Theodore Haak (1605-1690)' in *ODNB*.

demonstrates that she was an intelligencer in her own right.¹⁹ Pal's careful research highlights many of the intellectual, political, religious and medical projects with which Lady Ranelagh was involved throughout her twenty-year friendship and collaboration with Hartlib. She establishes that many of Lady Ranelagh's London friendships had begun in Ireland, and convincingly dates the beginning of Lady Ranelagh and Hartlib's initial collaboration to early 1642 — before Lady Ranelagh's move to London in 1643. Pal argues that when Lady Ranelagh arrived in London, 'she did so as a member of an already-existing network of Irish natural philosophers and reformers', and further explains that Ranelagh's work with the Hartlib Circle was 'an outgrowth of her earlier activities'.²⁰ Pal's research lends further support to Nicholas Canny's spirited attack on scholarship that 'attempt[s] to view Robert Boyle and his sister Catherine [sic], Lady Ranelagh, as creatures of the Hartlib Circle'. Canny suggests the Boyle family's outlook was shaped largely in Ireland by the influence of their father Richard Boyle, Earl of Cork, prior to their move to England.²¹

While Carol Pal has demonstrated that Lady Ranelagh saw herself as an active member of the Hartlib Circle, I would emphasise that this was not only Ranelagh's own perception, but the view held by other members of the Circle. A brief sampling of some of her key correspondents corrects earlier scholarship that suggested members of the Hartlib Circle saw her merely as a 'patroness', and reveals instead that Lady Ranelagh

¹⁹ An 'intelligencer' was one who collected and disseminated information, such as news, books, and manuscripts. See Mark Greengrass's definition included in his biographical entry of Samuel Hartlib in the *ODNB*.

²⁰ Pal, 'Republic of Women', I, p. 226.

²¹ Nicholas Canny, *The Upstart Earl: A Study of the Social and Mental World of Richard Boyle, First Earl of Cork 1566-1643* (Cambridge: Cambridge University Press, 1982), p. 146.

was an active member with whom fellow members engaged as an intellectual equal, or even superior, on a range of subjects.

John Dury considered Lady Ranelagh as a spiritual confidante and guide, and maintained a frequent correspondence with her throughout the latter half of the 1640s, when he was debating many theological questions. In a letter to Hartlib dated 8 September 1646, Dury explained, ‘I thought to have been large at this tyme & given yow the Logickall discourse as it now lyeth in my mind, but having fallen upon a Discourse to my Lady Ranelagh about our walking with God in faith; it hath eaten up all my tyme’.²² Dury’s comment places his theological discourse to Lady Ranelagh on a par with his logical discourse to Hartlib, demonstrating its importance to him and the respect in which he held her. This is similar to the lengthy exchange that took place between Dury, Lady Ranelagh and Dorothy Moore from 1643 to 1645, when Dury sought Lady Ranelagh’s help in persuading Moore to marry him. Moore was unsure whether she might best serve God by marrying John Dury or by remaining single, and wrote to Lady Ranelagh for advice. Hartlib thought this series of letters could benefit the public, and printed them in an anonymous pamphlet entitled *Madam, although my former freedom* (1645).²³ These examples place Lady Ranelagh in a position of theological authority and

²² HP 3/3/34A-B, Letter, Dury to Hartlib, 8 September 1646. Also see HP 3/3/40A-B, Letter, John Dury to Hartlib, 13 Oct. 1646.

²³ The pamphlet comprised three of Moore’s letters and two of Dury’s letters to Lady Ranelagh, and was titled *Madam, although my former freedom* (London, 1645). For Moore’s angry response to this print publication, see HP 3/2/143A-144B, Undated Letter, Dorothy Moore to Samuel Hartlib. On religion and marriage, see HP 21/7/1A-2B, Copy Letter, Dorothy Moore to [Lady Ranelagh], 8 July 1643; HP 8/52/1A-2B, Copy Letter, Dorothy Moore to Lady Ranelagh, 13 April 1644; HP 21/7/7A-8B, Copy Letter, Dorothy Moore to Lady Ranelagh, [c. Nov. 1644]; HP 21/7/3A-4B, Copy letter, Dorothy Moore to Lady Ranelagh, 2 Dec. 1644; HP 21/7/5A-6B, Copy letter, Dorothy Moore to [Lady Ranelagh], 23 Jan. 1645; HP 3/2/95A, Dorothy Moore to Lady Ranelagh, 21 Feb. 1645; HP 3/2/118A-121B, Dorothy Moore to Lady Ranelagh, 5 May 1645. For more on Dorothy Moore, see ‘Introduction’, in *The Letters of Dorothy Moore, 1612-64: The Friendships, Marriage, and Intellectual Life of a Seventeenth-Century Woman*, ed. by Lynette Hunter (Aldershot, Hants: Ashgate, 2004), pp. xv-liv.

show that even correspondents considered by others to be religious authorities turned to her for advice on lived religion.

The mathematician Robert Wood also sought Lady Ranelagh's advice on various subjects, and the two maintained an intimate friendship in the late 1650s when they were both in Ireland. Wood and Ranelagh collaborated on various Hartlibian schemes, and Hartlib sent parcels of books and proposals to them both.²⁴ In a letter Wood wrote to Hartlib in March 1657, he thanked Hartlib for sending his last letter via Lady Ranelagh, as it had 'given [him] the happinesse of an opportunitie to wayte upon the incomparable Lady Ranalaugh & to enjoy above an hours discourse wh her'.²⁵ One month later, Wood shared with her his proposal to decimalise the currency, and he wrote to Hartlib about 'that excellent judgement [of] my Lady Ranulaugh', who 'was pleased to passe a sentence of approbation upon it, as to publick use'.²⁶ Wood and Lady Ranelagh were still collaborating on projects one year later, as shown in a letter from Wood to Hartlib in June 1658. He explains, 'I have read the MS. papers. That from Hereford wch I shall transcribe & so transmitt to my Lady speakes yo friend ye Author so much a Vertuoso, ~~that~~ as I would take it for no small additional favour To know his Name, to the End I might love & honour it'.²⁷ 'My Lady' here is Lady Ranelagh, and she is included as an equal member of this circle where the latest manuscripts from virtuosi are circulated and

²⁴ Robert Wood (1622-1685) became involved with the Hartlib Circle in the mid-1650s and split his time living in both England and Ireland. The first reference to his friendship with Lady Ranelagh is in a letter from Robert Wood to Hartlib dated 13 May 1656, in which he thanks Hartlib for introducing her to him. HP 33/1/1A-2B. There are almost no letters extant between the two of them, but a plethora of references to Lady Ranelagh exist in Wood's other extant letters. See HP 33/1/3A-4B, Letter, Robert Wood to Hartlib, 10 June [1656]; HP 33/1/5A-6B, Letter, Robert Wood to Hartlib, 24 June 1656; HP 33/1/13A-14B, Letter, Robert Wood to Hartlib, 8 April 1657; HP 33/1/39A-40B, Letter, Robert Wood to Hartlib; HP 33/1/44A-B, Letter, Robert Wood to Hartlib, Feb 1659. Also see *ODNB* entry for 'Katherine Jones, Viscountess Ranelagh (1615-1691)'.

²⁵ HP 33/1/11A-12B, Letter, Robert Wood to Hartlib, 3 March 1657.

²⁶ HP 33/1/13A-14B, Letter, Robert Wood to Hartlib, 8 April 1657.

²⁷ HP 15/4/6A-7B, Letter, Robert Wood to Hartlib, 16 June 1658.

commented upon. The intellectual relationship between Wood and Lady Ranelagh shows them corresponding as equals, with him seeking her advice on various proposals.

Lady Ranelagh was also involved in the Hartlib Circle's projects for developing Ireland, which began around 1649 and continued for over a decade. This brought her into a diverse circle of Anglo-Irish intellectuals. As Patricia Coughlan explains, 'the scientist intellectuals of Hartlib's circle perceived Ireland as literally a God-given opportunity for scientific enquiry, experiment and the practical execution of their various schemes'.²⁸ Those members of the circle with connections with Ireland were involved in a range of projects for 'improvement', including religious conversion, planting settlements, and writing *Irelands Naturall History*.²⁹ The men active in promoting these plans always included Lady Ranelagh when circulating their proposals for general comment. Arnold and Gerard Boate were the original promoters of the natural history of Ireland, and Lady Ranelagh knew them both.³⁰ After both brothers died in 1650, Hartlib sought new successors, and approached Robert Child, William Petty, Miles Symner, and Robert Wood.³¹ Wood and Symner became heavily involved in the project in the late 1650s, and Lady Ranelagh was someone to whom they would always pass their proposals. One example may be found in a letter Wood wrote to Hartlib, probably in July 1657. Wood speaks of 'Lady Ranalaugh of whom I tooke a copy of the Proposal for planting Ireland, it came to her hands but 2 or 3 dayes before. I shall thinke of objecting somewhat against

²⁸ Patricia Coughlan, 'Natural History and Historical Nature: The Project for a Natural History of Ireland', in *Samuel Hartlib and Universal Reformation*, pp. 298-317 (p.302).

²⁹ T.C. Barnard, 'The Hartlib Circle and the Cult and Culture of Improvement in Ireland', in *Samuel Hartlib and Universal Reformation*, pp. 281-97; Coughlan, 'Natural History'. Composing the natural history of Ireland was a long term project led by Arnold and Gerard Boate, but only the first volume was printed, in 1652.

³⁰ See entry for 'Katherine Jones, Viscountess Ranelagh (1615-1691)' in the *ODNB*.

³¹ Barnard, 'The Hartlib Circle', pp. 284-85; Coughlan, 'Natural History', pp. 306-08.

it so soone as I have leisure'.³² The larger goals for the improvement of Ireland matched her own religious, political and intellectual ambitions, and her knowledge of and contacts in the country would have made her an asset to the Circle's plans.

Lady Ranelagh's interest in educational reform, a fundamental goal of the Hartlib Circle, expanded her intellectual network even further. She is the probable addressee of Dorothy Moore's treatise on educational reform for girls.³³ In this treatise, Moore argued against the 'practise common in schooles to teach them dressing, curling, and such like', which she disapproved of 'namely, because it brings no good to the soule or body of mankind: neither from Religion or Reason hath it a ground'.³⁴ We do not know if Lady Ranelagh ever replied, but she would have agreed with Moore's emphasis on 'Religion or Reason' as the fundamental principles of education. In 1659, Lady Ranelagh was holding meetings on educational reform in her home, as evidenced by a letter she wrote to Hartlib that exists only in his lengthy extract. She explains, 'I do indeed expect a meeting here this afternoon of the two good men you mention, (she means Mr. Wood & Mr. Potter,) and my brother Boyle, & another ingenious person, in order to the carrying on of that work (education of children)'.³⁵ She further explained that the education of children was essential to 'laying the foundation of the Kingdom of Christ', because 'it can be laid no rational way, but by timely and good instruction, joined with such discipline and

³² HP 31/1/21A-22B, Letter, Robert Wood to Hartlib, 27 July [1657?].

³³ For Moore's tract 'Of the Education of Girles', an undated manuscript [c. 1650], see BL Sloane MS 649, fols. 203-05. The tract is addressed to an anonymous 'Madame', but scholars agree that contextual evidence suggests the addressee is Lady Ranelagh. For a transcription, see *Letters of Dorothy Moore*, pp. 86-88. Lynette Hunter also suggests that Hartlib intended to print this discourse. See *Letters of Dorothy Moore*, p. 86, n. 150.

³⁴ *Letters of Dorothy Moore*, p. 87.

³⁵ Quoted from Hartlib's extract of her letter in his letter to John Worthington, written 30 January 1660. See *The Diary and Correspondence of Dr. John Worthington*, ed. by J. Crossley, 3 vols. (Chetham Society: Manchester, 1847-86), I (1847), pp. 162-177 (p. 166). There is an additional copy extract from this letter in BL Add. MS 15948, fols. 76v-77v.

guidance as may accustom children to repeat the good lessons they are taught by the daily obedience & conformity thereunto'.³⁶ Hartlib's annotation makes it clear that her meeting included Robert Wood, Robert Boyle, either Francis or William Potter, and 'another ingenious person', and the quotation shows that some meetings of the Hartlib Circle took place in her house.³⁷

Lady Ranelagh's involvement in the political debates taking place within the Circle may be seen in her correspondence with Sir Cheney Culpeper, which was discussed in Chapter 1. In or before 1648 she initiated a political and legal discussion with Culpeper, involving such contentious issues as the Oath of Allegiance and legal queries related to the rights of Parliament and the King.³⁸ Culpeper wrote a lengthy response to Lady Ranelagh and Hartlib circulated copies of letters from both correspondents throughout the Circle.³⁹ This interaction demonstrates that she not only responded to set topics, but also helped to shape key intellectual debates with the Circle on the most controversial contemporary issues.

Viewed collectively, the extant letters in the Hartlib Papers written to, from, and about Lady Ranelagh evidence her involvement in the Circle's plans for educational reform, political theory, theological enquiry, medical practice, and scientific discoveries.

³⁶ *Diary and Correspondence of Worthington*, p. 166.

³⁷ Little is known about William Potter, author of *The Key to Wealth* (1650), except that he was advocating a reformation of the currency. He might be the 'Mr. Potter' referenced here because he knew Robert Wood and Lady Ranelagh in the late 1650s; however, there are no other extant references to his interest in educational reform. See *ODNB* entry for 'William Potter (fl. 1650-1651)', and Kevin Dunn, 'Milton Among the Monopolists: *Areopagitica*, Intellectual Property and the Hartlib Circle', in *Samuel Hartlib and Universal Reformation*, pp. 177-192 (pp. 183-86). Francis Potter was a clergyman with various social and intellectual interests, including natural philosophy and medicine. He was not an active member of the Hartlib Circle, but he knew some of Hartlib's correspondents, including Dr John Wilkins and Joseph Mede. His interest in educational reform is also not known, but it could fit easily among his other interests and his commitment to religion. See *ODNB* entry for 'Francis Potter (1594-1678)'.

³⁸ HP 26/13/1A-2B. Copy Questions & Letter in Scribal Hand, Lady Ranelagh to Hartlib. Undated. For a more thorough discussion of these questions, see above Chapter 1.

³⁹ For Culpeper's response, see HP 26/12/1A-6B, Copy Extracts on Power of Commons to Levy Money, Culpeper to Hartlib.

The range of subjects in which she involved herself and the multitude of people with whom she corresponded demonstrate that she was active in many of the Circle's projects for the entirety of its existence. More than just being 'associated with the Hartlib Circle' or 'being regarded by his [Hartlib's] circle as a patroness', Lady Ranelagh was one of the Circle's key correspondents, and fellow members considered her to be a source of authority on many subjects. This is further supported by the fact that several of her letters were copied, extracted, annotated and even translated into other languages in order to reach a larger circulation. For example, in 1658 Peter Figulus, an amanuensis for the Hartlib Circle and eventual son-in-law of Comenius, wrote from Amsterdam to tell Hartlib 'I made in dutch the Extracts hitherto sent mee of the Letters of the Viscountesse: which Monsieur de Geer delighteth in'.⁴⁰ Pal has explained that Dutch here means 'Deutsch', or 'German', and this reference may suggest that Figulus is responsible for the three German copies of letters written by Lady Ranelagh preserved in the Hartlib Papers archive.⁴¹ These German letters are mostly religious in nature, though Pal has also noted a reference within one to the Invisible College, a group of intellectuals centred around Robert Boyle in the late-1640s who may have met at Lady Ranelagh's London home.⁴² Her political questions to Culpeper also exist only in copies, and Hartlib sent a copy of one of her letters concerning chymical subjects to John Winthrop the younger, then

⁴⁰ HP 9/17/51A-52B. Letter, Peter Figulus to Samuel Hartlib.

⁴¹ Pal, 'Republic of Women', I, p. 382. For copy extracts in German, see HP 39/50A-55B; HP 39/2/56A-59B; and HP 39/2/60A61B. These extracts date from October 1656 to February 1657, and some exist in multiple copies.

⁴² HP 39/2/56A, Letter, Lady Ranelagh to unknown correspondent, 3 November 1657. Carol Pal uses an English translation from the German by Kristen Rebien: 'I still wish with gladness to express my friendship for you, and would be pleased, at your convenience, to hear something of the news regarding your Invisible College, since in the visible ones one finds little more than that which gives us cause to complain and to long for improvement.' For more on the Invisible College, see Charles Webster, *Great Instauration*, pp. 57-62, and see Charles Webster, 'New Light on the Invisible College: The Social Relations of English Science in the Mid-Seventeenth Century', *Transactions of the Royal Historical Society*, 24 (1974), 19-42.

residing in the American colonies.⁴³ This confirms that Lady Ranelagh's letters were published in the mode of scribal publication and widely circulated, reaching an international audience that would learn to identify her work.⁴⁴ Her reputation as a learned woman travelled before her, and there are several references in the Hartlib Papers to influential men requesting to be introduced to her. For example, an entry written on 1 Dec 1655 in Hartlib's 'Ephemerides' states that John Cutler, a wealthy London Alderman, would like to be introduced to Lady Ranelagh.⁴⁵ References to Lady Ranelagh as 'that excellent lady our friend' appear in several letters written between members of the circle, invoking her as a source of intellectual authority even when she is not present.⁴⁶

By adding a discussion of natural philosophy to our understanding of Lady Ranelagh's Hartlibian activities, we gain a more comprehensive view of her intellectual interests and community. Her interest in natural philosophy, like that of the Hartlib Circle as a whole, must be seen as an extension of her larger political and religious goals. As will be discussed later in this chapter, she promoted the Baconian philosophy of openly communicating all useful knowledge of natural philosophy to enhance the public good. Charles Webster has explained how Francis Bacon became the most influential scientific authority in the 1640s and 1650s. He argued that 'Bacon's philosophical system evolved in the context of the Calvinist code of ethics as well as of the providential and millenarian

⁴³ The copy is no longer extant, but Hartlib makes a reference to having sent a copy of Lady Ranelagh's letter in HP 7/7/1A-8B. Lady Ranelagh's chymical letter will be discussed in the next section.

⁴⁴ On scribal publication, see Harold Love, *Scribal Publication in Seventeenth-Century England* (Oxford: Oxford University Press, 1993) and Arthur Marotti, *Manuscript, Print, and the English Renaissance Lyric* (Ithaca: Cornell University Press, 1995).

⁴⁵ HP 29/5/58A, Ephemerides 1655, Part 4. John Cutler (1609-93) became an Alderman in 1654. He was made a Baronet in November 1660 and named an Honorary Fellow of the Royal Society in 1664. See J.R. Woodhead, *The Rulers of London 1660-1689: A Biographical Record of the Aldermen and Common Councilmen of the City of London* (London: London & Middlesex Archaeological Society, 1965), pp. 55-56, and see entry for 'Sir John Cutler 1607/8-1693' in the *ODNB*.

⁴⁶ HP 33/1/5A-6B. Letter, Robert Wood to Hartlib. 24 June 1656.

view of history'.⁴⁷ Though most of Bacon's key texts were published in the 1620s (and some, such as the *Advancement of Learning* (1605), even earlier), these books did not reach their peak influence in England until decades later, when his suggestions on how to recapture a pre-lapsarian state of perfection on Earth found new life in the movements for socio-religious reform active during the Civil Wars and Interregnum.⁴⁸ The reformers believed that the Great Instauration of learning would be coupled with a new understanding of nature itself, making natural philosophy an essential subject in their larger plans for social reform. Lady Ranelagh was typical of other members of the Hartlib Circle by endorsing Bacon's theories in her discussions of natural philosophy.

Prior to analysing her letters and treatises on natural philosophy, it is essential that two of Lady Ranelagh's key correspondents on the subject be introduced properly: Henry Oldenburg and John Beale. Best known for his role as the first secretary of the Royal Society, Oldenburg had an interest in natural philosophy that appears to have begun on his visit to England in 1653. What began as a political mission with the intention of negotiating on behalf of Bremen resulted in a visit with considerable personal gains for Oldenburg. It was then that he met John Milton, and it is probable that Milton introduced him to Lady Ranelagh.⁴⁹ Scholars agree that this meeting with Lady Ranelagh was a key

⁴⁷ Webster, *Great Instauration*, p. 25.

⁴⁸ William T. Lynch, 'A Society of Baconians?: The Collective Development of Bacon's Method in the Royal Society of London', in *Francis Bacon and the Refiguring of Early Modern Thought: Essays to Commemorate The Advancement of Learning (1605-2005)*, ed. by Julie Robin Solomon and Catherine Gimelli Martin (Aldershot: Ashgate, 2005), pp. 173-202, esp. pp. 178-81.

⁴⁹ The earliest dated letter from Oldenburg to Lady Ranelagh is a copy of letter written 6 May 1655, in which Oldenburg has crossed out Lady Ranelagh's name and changed it to 'right honourable lady', thereby calling the attribution to Lady Ranelagh into question. Milton and Oldenburg probably met in the summer of 1653. See *The Correspondence of Henry Oldenburg*, 13 vols, ed. & trans. by A. Rupert Hall and Marie Boas Hall (Madison: University of Wisconsin Press, 1965-1988), I (1965), pp. 35 & 73-74.

element in shaping his future career in England.⁵⁰ In addition to introducing Oldenburg to many influential people in her learned circle, Lady Ranelagh appointed him as tutor to her son, Richard Jones, in 1656. Oldenburg began working with Jones in Oxford, and in May 1657 the two left for a three year ‘Grand Tour’ of the continent. Throughout these years abroad, the two men visited courts, universities and libraries and met distinguished intellectuals in various fields.

Henry Oldenburg became associated with the Hartlib Circle sometime in the mid-1650s. His name begins to appear in the archive in 1656, and occurs with far greater frequency during his three years abroad. Iordan Avramov has shown that ‘As far as the correspondence is concerned, from that moment on the exchanges with the two men [Samuel Hartlib and Robert Boyle] and Lady Ranelagh became the most prominent part of Oldenburg’s letter writing for the period in question’.⁵¹ Unfortunately, only a copy extract from one of Lady Ranelagh’s letters to Oldenburg is extant today, and only two complete letters and one extract from Oldenburg to Lady Ranelagh survive.⁵² However, Oldenburg’s letters to Hartlib and other members of the Circle contained several references to his continuing correspondence with Lady Ranelagh.⁵³ Furthermore, in a letter dated 20 August 1659, Oldenburg wrote to Lady Ranelagh’s daughter, Lady Frances Jones, to thank her for her letter and state that he is obliged ‘in regard of yr

⁵⁰ See entry for ‘Henry [Heinrich] Oldenburg (c.1619–1677)’ in the *ODNB* and Iordan Avramov, ‘An Apprenticeship in Scientific Communication: The Early Correspondence of Henry Oldenburg (1656-63)’, *Notes and Records of the Royal Society of London*, 53 (1999), 187-201 (p. 190).

⁵¹ Iordan Avramov, ‘An Apprenticeship’, p. 190. A. Rupert Hall and Marie Boas Hall also agree that Lady Ranelagh probably introduced Oldenburg to Boyle. See *Correspondence of Oldenburg*, I, p. 74.

⁵² This count includes the earliest letter from May 1655, mentioned above. The other full letter from Oldenburg is dated 22 August 1657 and the fragment of a letter from late November 1659 is included in a letter that Lady Ranelagh wrote to Robert Boyle on 3 Dec. 1659. See *Correspondence of Oldenburg*, I, pp. 73-74, 130-32, and 336. The extract from Lady Ranelagh’s letter has been copied into Oldenburg’s letterbook, and may actually be an extract from multiple letters, dated c. 1656-57. See Royal Society Library, MS/1, fols. 190-94, ‘Ex. Litt. M[adam] Ra[nelagh]’.

⁵³ For example, see *Correspondence of Oldenburg*, I, pp. 148-49, Letter, Henry Oldenburg to Hartlib, 26 Dec 1657, and HP 39/3/6A-B, Letter, Henry Oldenburg to Hartlib, 16 Feb. 1658.

Excellent mother, who rather yn to leave me one week unsaluted, would give you ye trouble of writing for her'.⁵⁴ The letter suggests that Lady Ranelagh wrote to Oldenburg on a weekly basis, a frequency which appears to have been maintained throughout the three years when Oldenburg was abroad with her son. Their intimacy in both personal and intellectual matters may be further evidenced by a series of letters written to various new correspondents in France during May and April 1659, when Oldenburg was solidifying new intellectual relationships abroad. As a token of his friendship and as a way of gaining intellectual credentials in a new scholarly circle, Oldenburg promised to share with them two books recently published in England: *On the Immortality of the Soul* by Henry More and *Treatise on Fermentation and Fevers* by Thomas Willis.⁵⁵ He entrusted this task to Lady Ranelagh, as is evidenced by a letter Oldenburg wrote to Hartlib in August, in which he lamented 'I wonder, where ye Gentleman, to whom MyL. Ran. gave those books for to bring them hither for us ... is dormant so long, seing I never heard of him yet here or in any part of France'.⁵⁶ In asking her for these books, Oldenburg knew that Lady Ranelagh was a trustworthy correspondent who would send him the books promptly and he may have assumed that she was familiar with the texts.

One of the most complex and fascinating of Lady Ranelagh's key intellectual friendships is that with John Beale. Beale was a clergyman in Herefordshire who did not become a member of the Hartlib Circle until the late 1650s, at which point he became an active correspondent on matters of theology, agriculture and natural philosophy —

⁵⁴ *Correspondence of Oldenburg*, I, p. 305.

⁵⁵ *Correspondence of Oldenburg*, I, pp. 227, 231, and 242.

⁵⁶ *Correspondence of Oldenburg*, I, p. 303.

interests he would continue to pursue as a Fellow of the Royal Society after 1663.⁵⁷ He also held a lifelong interest in prophetic dreams, which he discussed with members of the Hartlib Circle as well as old friends from Somerset with whom he remained in contact, such as Reverend John Oliver, Minister of Montacute. Though recent interest in Beale and the Hartlib Circle has identified his connections with key members such as Henry Oldenburg, Robert Boyle, Benjamin Worsley, John Evelyn and Hartlib himself, there has been no research exploring his relationship with Lady Ranelagh, which appears to have been intimate.⁵⁸ The earliest evidence of their friendship is in May 1657, though the ease with which they communicated and the intellectual rigour of their discourse suggests that this was not their first correspondence.⁵⁹ The two primarily engaged in theological discussions, and several lengthy discourses from Beale to Lady Ranelagh survive, including one concerning the Apostles' Creed written in September 1660, showing that their intellectual and spiritual explorations continued after the dissolution of the Hartlib Circle with the Restoration of the monarchy.⁶⁰

Though it is no longer extant, Lady Ranelagh wrote to Beale a discourse on dreams, which we know of through Beale's lengthy, thoughtful response, surviving in the Hartlib Papers archive.⁶¹ It is unfortunate that Lady Ranelagh's half of the conversation is no longer extant because in addition to contributing to our understanding of her

⁵⁷ Mayling Stubbs, 'John Beale, Philosophical Gardener of Herefordshire; Part I. Prelude to the Royal Society (1608-1663)', *Annals of Science*, 39 (1982), 463-489; 'John Beale (bap. 1608, d. 1683)' entry in the *ODNB*.

⁵⁸ Mayling Stubbs has briefly touched upon their friendship in her article 'John Beale'. Ruth Connolly mentions that Lady Ranelagh wrote Beale a discourse on dreams in her article 'A Manuscript Treatise by Viscountess Ranelagh (1614-1691)', *Notes and Queries*, 53 (2006), 170-72.

⁵⁹ This is known from a letter Beale wrote to Hartlib on 28 May 1657. See HP 25/5/1A-12B. The only letter written between them that does include a formal disclaimer and generally reads as though it were written at the beginning of their friendship, can be found in HP 27/16/1A-14B, Copy Letter, John Beale to Lady Ranelagh. Unfortunately, this letter is undated.

⁶⁰ See Royal Society Library, MS, RB/3/1/24. A Copy of a Letter written to the Rt. Honbl. Vic:tesse Ranalaugh by J.B. concerning Apostles Creede. 5 September 1660.

⁶¹ HP 25/5/1A-12B (7B), Letter, [John Beale] to [Hartlib].

theological beliefs, this discourse may also have disclosed more on her ideas regarding the secrets of nature, as some natural philosophers, including George Starkey and Robert Boyle, believed that God could transmit alchemical secrets through dreams.⁶² Indeed, Beale's discourse includes a story of a man who was bed-ridden for twenty-five years who learned in a dream of a herb with therapeutic properties that, upon waking, he made into an oil salve and 'suddenly had a miraculous recovery'.⁶³ Since the 'response' is written more as a stand-alone treatise than a direct response to a previous discourse, it is almost impossible to read this for clues to what Lady Ranelagh's piece may have said; however, Beale's philosophical tone, which draws on his knowledge of theology and natural philosophy, suggests that Lady Ranelagh's treatise probably engaged with similar concepts and displayed her ability to present arguments based upon them. About two weeks later, Beale approached Hartlib with another discourse on dreams with 'reservednes and caution', asking Hartlib not to circulate the manuscript to the larger network. However, he explained, 'I doe not exclude our right honorable Lady, but I must præscribe your warines, That you doe not in thiese things by any meanes overcharge anothers beleefe'.⁶⁴ Beale trusted and respected Lady Ranelagh's intellectual contribution even when he was wary of relaying his thoughts to other members of the Circle, and he always included Lady Ranelagh in his ongoing studies of dreams. The letters that passed between Lady Ranelagh and John Beale weaved together the subjects of natural philosophy and religion, matters inextricably linked for both of them.

⁶² William R. Newman, 'George Starkey and the Selling of Secrets', in *Samuel Hartlib & Universal Reformation*, pp. 193-210, esp. pp. 196-200. The link between dreams and God revealing nature's secrets was also made by the sixteenth-century Italian natural philosopher Girolamo Cardano. See Markus Fierz, *Girolamo Cardano, 1501-1576: Physician, Natural Philosopher, Mathematician, Astrologer, and Interpreter of Dreams*, trans. by Helga Niman (Boston: Birkhauser, 1982).

⁶³ HP 25/5/1A-12B (7B), Letter, [John Beale] to [Hartlib].

⁶⁴ HP 25/5/13A-20B (13A), Letter [John Beale] to [Hartlib], 8 June 1657.

The next section explores the types of natural philosophy in which Lady Ranelagh was interested, with the goal of gaining a more comprehensive understanding of her knowledge of and involvement in the subject. For the most part, her natural philosophical knowledge is evidenced only by letters written to or about her, demonstrating the incompleteness of the surviving archives and offering us only glimpses into what must have been a very active intellectual interest.

Lady Ranelagh and the Hartlib Circle: Discussions of Natural Philosophy

In addition to addressing religious, political, and medical topics, Lady Ranelagh's letters from her years as a member of the Hartlib Circle also demonstrate her interest in various branches of intellectual study that may be categorised under the umbrella term 'natural philosophy'. These topics include optics, horticulture, and chymistry, the latter being the subject to which she appears to have dedicated herself the most. According to Charles Webster, in the mid-1640s 'the increasing involvement of Hartlib's group with the experimental sciences, especially chemistry, added to the potential interest for [Robert] Boyle'.⁶⁵ While Robert Boyle's attraction to the Circle's increased interest in experimental science has been well documented, Lady Ranelagh's interest in these topics has received little attention. The number of places in the archive where her name is connected to natural philosophy, particularly chymistry, increases dramatically around 1648, and this high frequency continues for the next twelve years.⁶⁶ An analysis of these documents shows that Lady Ranelagh's key correspondents on chymistry were Henry

⁶⁵ Charles Webster, 'Benjamin Worsley: Engineering for Universal Reform from the Invisible College to the Navigation Act', in *Samuel Hartlib & Universal Reformation*, pp. 213-235 (p. 218).

⁶⁶ This is based on my research. I have compiled a spreadsheet of references to Lady Ranelagh's name in the Hartlib Papers. This includes variant spellings of her name and many references that are obviously to her where she not named, such as 'my lady'.

Oldenburg, Robert Boyle and Samuel Hartlib, and an exploration of their relationships allows a view into her chymical knowledge.

As noted earlier, though Oldenburg and Lady Ranelagh maintained a frequent correspondence during his years in Paris, few letters are extant. However, references to Lady Ranelagh in letters that Oldenburg wrote to Hartlib and Boyle suggest that their correspondence branched into chymistry. One example is a letter Oldenburg wrote to Hartlib in July 1659, where at the close he said:

I send you here inclosed a Chymicall proces <of vitrioll> (in acknowledgement of the secret you sent me, which shall not loose the name of a secret for me) And intreat you, to communicate it to none, but noble Mr Boyle, who, I am sure, upon my desire will impart it to none but MyLady Ranalaugh, which is a person, that can keep a secret as well, as any I know.⁶⁷

The letter contains an enclosure entitled ‘Processus in opere philosophico Vitrioli. For Mr Hartlib’, and what follows is a sophisticated chymical procedure in Latin which Oldenburg obtained from an unnamed source.⁶⁸ This chymical process was carried out over several months, and Oldenburg detailed each step with technical language (such as ‘cucurbit’ and ‘phial’, which are types of vessels) and assumed an understanding of standard chymical procedures (such as distillation and creating a hermetical seal). The trial detailed each step in the process of spagyria (by which a material is separated into its component principles and then recombined into a more purified, active form) and includes the Paracelsian *tria prima* (sulphur, mercury and salt) as key ingredients.⁶⁹ At

⁶⁷ HP 39/3/25A-27B (25B), Letter, Henry Oldenburg to Hartlib, with Enclosure, 5 July 1659. Words in < ... > are Hartlib’s additions to the letter.

⁶⁸ Hall & Hall translate the title as ‘The Method in the Philosophical Work of Vitriol’. From here on, I quote from their English translation of the Latin. See *Correspondence of Oldenburg*, I, p. 275-77.

⁶⁹ My definitions are taken from the following sources: Martin Ruland, *A Lexicon of Alchemy*, trans. by A. E. Waite (Frankfurt: 1612; York Beach, ME: Weiser, 1984); Lyndy Abraham, *A Dictionary of Alchemical Imagery* (Cambridge: Cambridge University Press, 1998) and Lawrence Principe, *The Aspiring Adept: Robert Boyle and his Alchemical Quest* (Princeton: Princeton University Press, 1998).

the conclusion of the trial, he quoted his anonymous source as having said, ‘I took one grain of it [the final substance] and projected it upon an ounce and a quarter of mercury, which I changed into the purest silver ... it did not yet perform the work of the red tincture since it only changed mercury and lead into silver although (after parting) three grains of gold appeared in the silver’.⁷⁰ This document typifies many of Oldenburg’s extant letters from Paris to Boyle and Hartlib: Oldenburg would offer detailed chymical recipes, explain various processes he had learned, relay accounts of meetings he had with esteemed European intellectuals, and give quotations from his original sources interspersed with occasional comments from himself.⁷¹

This passage is significant for several reasons. First, Oldenburg acknowledges that the close relationship between Lady Ranelagh and her brother extended to communicating scientific secrets, suggesting that she held an active role in Boyle’s scientific experimentation and was not simply his ‘hostess’, as she is described in most accounts of their relationship. Second, Oldenburg explicitly refers to Lady Ranelagh as one who can ‘keep a secret as well, as any I know’, suggesting he had previously communicated secrets to Lady Ranelagh.⁷² Oldenburg acknowledged Lady Ranelagh as an intellectual equal who would understand and be interested in this complicated chymical procedure. Third, the fact that the enclosed ‘Processus in opere philisophico Vitrioli’ is entirely in Latin also suggests that Lady Ranelagh could read Latin. Oldenburg was not alone in this assumption — one of John Beale’s letters to Lady

⁷⁰ *Correspondence of Oldenburg*, I, pp. 275-277 (p. 276).

⁷¹ Avramov, ‘An Apprenticeship’, pp. 190-191.

⁷² On communicating secrets, see William Eamon, *Science and the Secrets of Nature*, esp. Ch. 10.

Ranelagh, written in 1660, has Latin Biblical quotations casually interspersed throughout the document, showing that he also believed she could read Latin.⁷³

Lady Ranelagh did not only discuss chymistry in such 'secret' transactions with men who would later become Fellows of the Royal Society — she also recorded her knowledge of the subject in the medium of scribal publication. One example can be found in her letter to Hartlib about 'Dr Butler of Ireland'. There are several references to the elusive 'Dr Butler' in the Hartlib Papers, and stories of his 'stone' circulated throughout Europe, with many chymists trying to reproduce it throughout the late 1650s and early 1660s.⁷⁴ The most famous account of Dr Butler is that by Jan Baptista Van Helmont (1577-1644), first published in Latin in his lengthy compendium *Ortus Medicinae* (1648).⁷⁵ The text contains over one hundred treatises that mostly concern medicine, and includes one entitled 'Butler', which documents the 'history' of a 'certain Irish-man called Butler' and his 'certain little stone'. Van Helmont claims to have befriended Butler, but he never obtained his secret.⁷⁶ The chapter ends with some suggestions as to the metallic and chymical properties of which it must have been comprised. The Hartlib Circle was familiar with Van Helmont's *Oriatricke* before its

⁷³ Royal Society Library, RB/3/1/23. John Beale to Lady Ranelagh, John Beale to Lady Ranelagh, 5 September 1660.

⁷⁴ There is a reference to Dr Butler in a letter dated one month earlier than Lady Ranelagh's narrative in HP 33/1/48A-49B, Letter Robert Wood to Hartlib, 21 March 1659: 'I heare there is one Mr. Butler (son to one Dr. Butler of Ireland, but not the famous Dr Butler of Cambridge who as I take it died unmarried) now living at Galoway, I have wrot to him <by a friend of mine & his> to the tenor of what you desire & what answer he returnes shall be transmitted to you.' A letter from Oldenburg to Freiherr von Friesen, 26 April 1649, mentions a man near Montpellier who was trying to prepare 'Butler's stone'. See *Correspondence of Oldenburg*, I, pp. 233-238.

⁷⁵ This first edition was published in Latin in 1648, four years after his death. It was reprinted in seven editions (1707 being the last edition) and was translated into German, French and English. His son, Francis Mercury Van Helmont (1618-1699), is responsible for the translation and print publication of the English edition, entitled *Oriatricke, Or, Physick Refined*, which was first published in London in 1662. For more on J. B. Van Helmont and a bibliography of his books, see Walter Pagel, *Joan Baptista Van Helmont: Reformer of Science and Medicine* (Cambridge: Cambridge University Press), 1982.

⁷⁶ I am quoting from the 1662 English translation. See Van Helmont, *Oriatricke*, pp. 585-596.

1662 English print edition, as evidenced by Robert Boyle's statement in *The Sceptical Chymist* (1661), that Van Helmont was 'an author more considerable for his experiments, than many learned men are pleased to think'.⁷⁷ Oldenburg's 1659 letters also demonstrate that he solicited his new continental associates for more information about Van Helmont's Butler. In May 1659, Oldenburg even procured a recipe from a man in Languedoc who tried recreating the stone by following Van Helmont's vague steps, and he sent it to Robert Boyle for examination.⁷⁸

On 5 April 1659, Lady Ranelagh participated in this international speculation by writing a lengthy narrative to Hartlib on 'What I know of Buttlers story'.⁷⁹ She begins the extraordinary tale by naming 'Dr Daniel Higgins an Irish man & a Physitian' as her source. In summary, the Irish Dr Butler moved to Paris and lived in such wealth that everyone believed he had the Philosopher's Stone. Higgins enlisted himself in Dr Butler's service in the hopes of gaining the secret from him. As Butler's servant, Higgins met a group of slaves whom Butler knew and Butler sent them back to his house with Higgins. Higgins then learned from these men that Butler had been kidnapped by pirates as a young boy and 'sold to ye Basha of Tunis, who [was?] himselfe a great Philosopher, & tooke this Buttler to make his fier & blow his bellows presumeing yt his Ignorance would keepe him from stealeing his Art from him'. However, Butler stole a box containing the essential powder and escaped on a newly arrived ship. Butler subsequently took Higgins with him 'to Orleance', or Orleans, where he purchased lead and the two laboured for hours every night, turning the lead into a pure, malleable silver. Just as the

⁷⁷ Quoted in Charles Webster, 'Water as the Ultimate Principle of Nature: The Background to Boyle's *Sceptical Chymist*', *Ambix*, 13 (1965-66), 96-107.

⁷⁸ *Correspondence of Oldenburg*, I, pp. 252-254. Oldenburg to Boyle, 7 May 1659.

⁷⁹ Yale University, Beinecke Library, Osborn MS 16789, Letter, Lady Ranelagh to Samuel Hartlib, 5 April 1659.

metal reached the point at which the secret powder could be added, Butler sent Higgins away on an errand, though he promised he would wait to make the gold later, when Higgins had returned. However, Higgins knew his master was lying and decided not to stray far; he stood outside on a stool and watched through a window as Butler worked on the metal. Just as Butler was about to add the powder, ‘which he [Higgins] sayd was ye gloryousest thing he euer saw’, Higgins fell off his stool and the noise caused Butler to stop and yell at the hostess of the house for trying to spy on him. While Higgins never saw the philosopher’s stone in action, upon his return to Paris he stole some gold coins from Butler’s pockets and was able to use them successfully. Higgins had since heard that Butler left France for Spain and died in a shipwreck.

This extraordinary letter is written in Lady Ranelagh’s own hand and is included in a batch of manuscripts that originated with the Hartlib Papers archive but is held now in the Beinecke Library at Yale University.⁸⁰ Stylistic choices suggest that Lady Ranelagh wrote it knowing that it would be circulated to other members of the circle. For example, the letter is not addressed to anyone specifically, and simply begins with her saying ‘What I know of Buttlers story ... is this’. The letter proceeds in clear prose and unravels the story in a thorough, explanatory manner, with the letter concluding when the story does. There is no inclusion of epistolary conventions before the signature, but instead it simply says ‘K Ranalaugh’. After this, the verso of the second folio begins with an accompanying personal note to Hartlib, which reads as follows:

Good Mr. Hartlib

I here send you the relation you were pleased to desire of me about
Buttler with ye Authority from which I receiued it, he liued even in this
place at a huge rate & was very neere Marying my Lady Margerett stuart

⁸⁰ An excerpt from of this letter may be seen in Appendix C-1.

a Cousen of the late kings,
I send you also ye other two letters open as Iudging it fit yt Mr Wood
should see what I have written to my Lord Chief Baron yt he may
accordingly proceed in his dealeing with him. you may please when you
have read myne to Mr Wood, to seale it, & to desier he would seale the
other before he give it My Lord & make himselfe ye beror of it.

I am Sr ~~yr~~ yr much obliged & affect. friend &
seruant in ye Lord Christ KR⁸¹

This latter note is much more typical of Lady Ranelagh's letters to Hartlib in that it is written in a more casual fashion that demonstrates their friendship, and it includes the obligatory prefatory and closing conventions. Lady Ranelagh's decision to separate her personal note from the longer narrative shows that she was writing consciously with an audience in mind. Hartlib knew this too, which is evidenced by his numerous changes to spelling and capitalisation throughout the Butler letter. He also made changes to the first paragraph of the accompanying note by capitalising the words 'relation', correcting the spelling and capitalisation of the name 'Margarett Stuart', changing 'Marying' to 'marrying', and breaking her first long sentence into two sentences by changing the comma between 'it' and 'he' into a full-stop. These are standard changes that Hartlib made to letters that he wanted copied and circulated more widely. Significantly, the second paragraph of Lady Ranelagh's accompanying note, which is of a more personal nature and not at all related to the Butler story, has no corrections. This suggests that Hartlib intended to include the first paragraph of Lady Ranelagh's accompanying note when copying the letter for scribal publication.

Though no scribal copy of this letter exists, we know that there was one through a reference in a letter from Hartlib to John Winthrop the younger, who was living in New

⁸¹ Yale University, Beinecke Library, Osborn MS 16789, Letter, Lady Ranelagh to Samuel Hartlib, 5 April 1659.

England.⁸² On 16 March 1660, Hartlib says ‘I have sent you a copy of a true relation concerning ye famous Buttler written unto me by a most incomparable lady (Viscountess Ranalaugh) of an Irish extraction’.⁸³ Hartlib’s letter to Winthrop is a lengthy discourse on alchemy, with Lady Ranelagh’s enclosed story being one of many chymical updates. The date shows us that Lady Ranelagh’s narrative was still circulating nearly one year after she had composed it and the addressee confirms that her writings were not only circulated throughout Europe, but also reached the colonies. While this is not the only occurrence in the Hartlib Papers where Lady Ranelagh was writing for a larger audience, it is the only letter of this kind that survives in the original instead of the copy.⁸⁴

If Lady Ranelagh was familiar with Van Helmont’s account, she does not engage with it, but instead wrote this document as an isolated narrative, typical of the seventeenth-century literary tradition that William Newman has dubbed the ‘transmutation history’. As Newman explains:

so many ... ambulatory ‘artists’ appeared in the course of the seventeenth century that they spawned a new genre of writing — the transmutation history. Filled with verifiable dates, locations and other circumstantial evidence, these documents served as witnesses of the elusive figures who were supposedly countering the double of their adversaries with genuine demonstrations of the philosophers’ stone ... The profusion of names, dates, and places makes these reports sound almost like a baroque parody of an early modern scientific transaction, and indeed, one must wonder if the latter may have derived some of their form from the example of these transmutation histories.⁸⁵

⁸² John Winthrop the younger was governor of Connecticut and lived most of his life in the American colonies. He had life-long interest in alchemy, which he included as an important element in his plans for social reform. See *ODNB* entry for ‘John Winthrop (1606-1676)’.

⁸³ HP 7/7/1A-8B (2A), Copy Letter in Scribal Hand ?, Hartlib to John Winthrop the Younger

⁸⁴ For example, see HP 26/13/1A-2B, Copy Questions & Letter in Scribal Hand E, Lady Ranelagh to Hartlib, Undated.

⁸⁵ William Newman, *Gehennical Fire: The Lives of George Starkey* (Cambridge, MA: Harvard University Press, 1994), pp. 3 & 5.

As a ‘wandering adept who has no need of employment, thanks to his alchemical mastery’, Dr Butler fits the ‘artist’ mould.⁸⁶ Lady Ranelagh backs each claim with a trustworthy source and identifiable place, and both she and Hartlib use legal jargon that present this as an official testimony. For example, she says that she delivers the narrative ‘with the Authority from which I received it’ and Hartlib endorsed the letter ‘written and attested by the Lady Vicountesse Ranalaugh’, both phrases stressing the official nature of the information she relayed, and the authority with which she conveyed it. As Newman explains about the genre in general, the tone, information and progression of argument make Lady Ranelagh’s account sound similar to Oldenburg’s scientific letters written to the Hartlib Circle while he was in Paris. Like Oldenburg, Lady Ranelagh collected personal information about a famed individual and passed on the information in a logical sequence using accessible language, demonstrating that she too was well-versed in the art of scientific communication.

Lady Ranelagh’s wider interest in chymistry made it natural for her to become interested in chymical medicine, or iatrochemistry. The documents in the Hartlib Papers show that throughout the 1650s, Lady Ranelagh was a practitioner and proponent of chymical medicine and that she discussed it with a wide-range of individuals, a topic that will be explored more fully in Chapter 5. Hartlib’s diary, ‘The Ephemerides’, includes many recipes to which Lady Ranelagh’s name is attached, and many of these include chymical ingredients or procedures.⁸⁷ He also copied extracts from her letters when she told him of new recipes she had received, many of which were chymical. For example, in September 1658, Lady Ranelagh included a recipe that she said was ‘given me by Sr

⁸⁶ Newman, *Gehennical Fire*, p. 5.

⁸⁷ For example, see HP 28/1/24B and HP 28/1/83A-B, ‘Ephemerides’ 1650.

Kenelme Digby, with most Extraordinary Commendation from his owne experience against festers & inflammation'.⁸⁸ Digby was a respected chymical practitioner, and his attached 'secret' included chymical terminology such as 'sublimate' and chymical ingredients such as 'aqua Calcis'.⁸⁹ This exchange confirms Digby's place in her circle of chymical correspondents, and the technical chymical language shows his assumption that she would understand such sophisticated terminology.

Lady Ranelagh's interest and expertise in chymical medicine may be further evidenced by her involvement in William Rand's 1656 proposal for a new medical society of chymical practitioners to counter the Galenic, conservative Royal College of Physicians.⁹⁰ Rand's letter to Hartlib in August 1656 began with, 'I have sent yow the Propositions I told you of, when we were together at my Ladie Ranulaghs. Be pleased to communicate them only to such as yow know are averse to the Colledge'.⁹¹ By establishing two colleges, Rand suggested that 'the more ambitious, covetous, domineering, & selfish sort of Physitians will evermore joine to the old Colledge. But the more studious, modest, retired, publick & humble spirited will joine to this new societie'. When considering two key elements — that this meeting was held at her house and that the critique of selfish

⁸⁸ HP 66/8/1A-B, Extracts and Recipes, Lady Ranelagh and Kenelm Digby.

⁸⁹ A 'sublimate' refers to the refined or concentrated product produced by the chemical process of sublimation, whereby a solid substance is heated and becomes a vapour. See the *OED* entries for 'sublimate' and 'sublimation'. *Aqua calcis*, also known as 'lime water', is the chemical compound calcium hydroxide, which may be obtained by mixing calcium oxide with water. See entry for 'Calcium Hydroxide' in *Encyclopaedia Britannica*, <www.britannica.com> [Accessed 12 June 2009]

⁹⁰ William Rand (1617-1663) was a chemical physician associated with the Hartlib Circle who split his time between England and the Netherlands. Charles Webster has argued that Rand's society was a forerunner to the Society of Chemical Physicians that was founded after the Restoration. See Webster, 'English Medical Reformers of the Puritan Revolution: A Background to the "Society of Chymical Physitians"', *Ambix*, 13 (1965-66), 16-41.

⁹¹ HP 42/10/1A-4B, William Rand to Hartlib, 15 August 1656. All further quotations from Rand's proposal are taken from this document.

physicians would match her own medical ethics — it appears that Lady Ranelagh was involved in these proposals for a new society of chemical physicians.⁹²

The body of references appears to suggest that Lady Ranelagh participated in progressive chymical discussions taking place in the 1650s and could speak with authority on various chymical subjects, ranging from transmuting metals to iatrochemistry. While evidence of her material practice of chymistry is not always strong, the references here indicate that the Hartlib Circle was an environment that fostered her interest in the subject. The circle encouraged her to write and circulate chymical treatises, and provided an intellectual network from which she could receive and solicit papers concerning developments in the subject.

In addition to chymistry, Lady Ranelagh had an interest in other branches of natural philosophy, and for these we must return to her friendship with John Beale. Their correspondence extended beyond theology and the philosophy of dreams, and included horticulture and optics, two subjects present in many of Beale's extant letters. As with her correspondence with Oldenburg, many of the original letters no longer exist, but references to them survive in letters Beale wrote to other members of the Circle, particularly Hartlib. For example, in one of Beale's letters to Hartlib in 1659, he says the following of Lady Ranelagh:

I pray you, Be pleasd to acquaint our excellent & precious Lady, whilst shee is amongst us, That some hopefull men in both Universityes, & in the corners of this Nation, doe begin to discern a plaine, & cleare light in the Gospell, That needes noe humane philosophy to adorne it or humane art, or humane authority to blaze it abroad; And to find another more usefull & more practicall philosophy, than is raysed from Cavills, disputations, & multitudes of Wordes. That Light of all sorts breakes out; Light into the Workes of God; Light from the Minde & Councells of God to enlighten the wayes & workes of good men. You may tell her of all our

⁹² Lady Ranelagh's medical ethics and her critiques of physicians will be discussed below in Chapter 5.

Opticall Instruments coming abroade, & allmost fitted for her owne hand,
& use.⁹³

Beale blends his theological metaphor on light into a vocabulary of science, two subjects that were often interlinked in the early modern period, as demonstrated by optic discussions on ‘natural light’.⁹⁴ Here, Beale suggests that Lady Ranelagh may be interested in the optical instruments these men were importing. He also frames this in Baconian language by deeming it a ‘usefull & more practicall philosophy’, appealing to the Circle’s ethical approach of linking their scientific experimentation to useful applications that would benefit the larger public. Contextual evidence offered in the following line, when Beale refers to ‘that Wand, that gives a Generall a viewe of his Army’, suggests that the optical instrument in question is a telescope. Beale’s interest in and knowledge of telescopes was acknowledged in letters passed between other members of the Hartlib Circle, and he wrote an undated manuscript treatise entitled ‘Perspective Tubes and Telescopes’.⁹⁵ While the reference to a telescope could suggest that Lady Ranelagh had an interest in astronomy, Beale’s reference explicitly refers to the instrument allowing one to see closer objects that were far away, suggesting that it was a terrestrial telescope. Terrestrial telescopes were the latest of the three available telescope

⁹³ HP 51/102A-106B (102B-103A), Letter, John Beale to Hartlib, 26 March 1659. Though the woman is unnamed, the reference must be to Lady Ranelagh because she is the only woman who is mentioned consistently in the correspondence between Beale and Hartlib with respect to theological and scientific matters.

⁹⁴ ‘Natural Light’ was a state of clarity produced by an image of God, but specific theories on human ability to (re)capture this were shaped by the natural philosopher’s religion. Peter Harrison, ‘What’s Philosophical about Natural Philosophy?’, at EMPHASIS seminar, Birkbeck College, University of London, 8 December 2007. Similarly, according to N.H. Clulee, John Dee believed that ‘celestial virtues may be studied and manipulated through the science of optics’. See N. H. Clulee, ‘Astronomia inferior: Legacies of Johannes Trithemius and John Dee’, in *Secrets of Nature: Astrology and Alchemy in Early Modern Europe*, ed. by William R. Newman and Anthony Grafton (Cambridge, MA: MIT Press, 2001), pp. 173-233 (p. 174).

⁹⁵ Nathaniel Highmore’s copy of Beale’s manuscript is extant. See BL, Sloane MS 548, fol. 18. For a knowledgeable and enthusiastic letter from John Beale concerning the importance and history of the telescope, see BL Add. MS 15948, fols. 92r-94v, Copy Letter, Beale to Hartlib, 16 March 1660.

models and could be used to gain a more comprehensive view of the natural world.⁹⁶

Beale suggests that the size of the instrument would suit Lady Ranelagh's hand well and therefore encourage her to use it. He does not allude to why Lady Ranelagh would be interested in the instruments, but this passage indicates that she had wider scientific interests than previously supposed.

Another way in which Beale put into practice the Hartlibian philosophy that open communication of knowledge was the most effective way of achieving Bacon's 'Great Instauration' was by printing horticultural texts and developing proposals for agricultural advancement. As with other scientific professions, the study of plants and their practical uses had not yet been divided into rigid sub-disciplines by the 1650s, so studies of agriculture, husbandry, horticulture and botany often overlapped.⁹⁷ The Hartlib Circle was active in all aspects of agricultural improvement, and many correspondents investigated and promoted projects ranging from improving fertilizers to cultivating new crops. For example, in Hartlib's 'Ephemerides' from 1650, he noted that 'Mr Boyle p[ro]mised to relate to [Cressy] Dym[ock] and Alb[ureth] a strange expriment of Husb[andry] equivalent almost of his to the slight of rolling'.⁹⁸ Husbandry was not only a paid occupation, but a subject that became increasingly attractive to gentlemen scholars of natural philosophy.⁹⁹ John Beale was at the forefront of the Hartlib Circle's agricultural projects. He was attracted to Bacon's suggestion that agriculture would be

⁹⁶ The three types of telescopes available in the mid-seventeenth century were: the Dutch (or Galileian) model, the astronomical telescope, and the terrestrial telescope. The terrestrial telescope was the latest invention, and had four or more convex lenses. Many members of the Hartlib Circle were interested in importing these new instruments from the continent, evidenced by their interest in the German manufacturer Johann Wiesel. See Inge Keil, 'Johann Wiesel and the Hartlib Circle', in *Samuel Hartlib and Universal Reformation*, pp. 268-78 (p. 273).

⁹⁷ Rebecca Bushnell, *Green Desire: Imagining Early Modern English Gardens* (Ithaca: Cornell University Press, 2003), esp. Ch. 1.

⁹⁸ HP 28/1/83A, 'Ephemerides' 1650, Part 4.

⁹⁹ Bushnell, *Green Desire*, pp. 25-31.

the most fundamental of the sciences in creating a useful natural philosophy, and his letters written throughout the 1650s are dominated by various aspects of natural history.¹⁰⁰ John Dixon Hunt has shown that ‘Hartlib and Beale, equally, saw husbandry not just as a matter of tilling and otherwise shaping the earth but as “true and real Learning and Natural Philosophy”’.¹⁰¹ Beale’s best-known text, *Herefordshire Orchards, A Pattern For All England* (1657), was printed by Hartlib with Beale’s initials on the title page, but Beale proposed a further two books on horticulture that never made it to print.¹⁰² Though the manuscript is undated, it was probably in the late 1650s that Beale offered Hartlib two lengthy proposals for books on gardening, ‘A Physique Guarden’ and ‘A Garden of Pleasure’, for Hartlib to judge ‘whether it bee usefull, & worthy of the publique view’.¹⁰³ John Dixon Hunt has offered a thought-provoking reading of the proposal for ‘A Garden of Pleasure’, but ‘A Physique Guarden’ has received no scholarly attention.¹⁰⁴ The full title would have been ‘A Physique Guarden And the preparation of Composts Fit for all kinds of Gardens. And fit for experiments of generall use’.¹⁰⁵ Beale told Hartlib that he intended to ‘bestowe a preface on it, or a dedication to the right honorable the Vi[scountess] Ra[nelagh] in Ireland’. He then listed thirty-nine chapter titles which ranged from discussions of Virgil to general gardening suggestions as to which plants were suitable for different types of soil. The thirty-eighth chapter has the interesting title ‘That Hee is neyther worthy of a Garden, nor a true owner of it, That hath

¹⁰⁰ Stubbs, ‘John Beale’, p. 478.

¹⁰¹ Hunt, ‘Hortulan Affairs’, p. 334.

¹⁰² Michael Leslie has argued that Beale suppressed these two projects when he heard of John Evelyn’s work on the ‘Elysium Britannicum’. See Michael Leslie, ‘The Spiritual Husbandry of John Beale’, in *Culture and Cultivation in Early Modern England: Writing and the Land*, ed. by Michael Leslie and Timothy Raylor (Leicester: Leicester University Press, 1992), pp. 151-72 (p. 170, n. 3).

¹⁰³ HP 25/6/1A-4B (1A), Letter, John Beale to [Hartlib], Undated. I have dated this as a late 1650s document because of similar proposals Beale made to Hartlib, which were all between 1657 and 1659.

¹⁰⁴ Hunt, ‘Hortulan Affairs’.

¹⁰⁵ HP 25/6/1A-4B (2B), Letter, John Beale to [Hartlib].

not the use of the Lymbec to extract oyles, salts, spirits &c', one of the very few chapters that directly link this garden to 'Physique', or medicine — and explicitly chymical medicine.

Just as Robertson's dedication in *A Gate or Door* (1653) drew on her interest in Hebrew and Boyle's dedication in *Occasional Reflections* (1665) reflected on her piety, here Beale's proposed dedication to Lady Ranelagh suggests that she had an interest in the practical applications of plants. In Hartlib's 'Ephemerdes' of 1652, there is one further reference to Lady Ranelagh's interest, when he says, 'In the field Garden right over my Lady Ranelagh there is the Plant called Virginia-silke (Quaestio, an idem with silk-grasse) which yealds very good silke ... The owner of that Garden wonders at the lazie stupidity of People that they make no Plantation of it for encreasing of silk'.¹⁰⁶ This reference suggests that Hartlib became acquainted with this plant on a visit to Lady Ranelagh, and it is possible that she brought the specimen to Hartlib's attention.

In proposing a dedication to Lady Ranelagh, Beale knew that she would approve his goal of extending access to and knowledge of medicinal herbs beyond exclusive scholarly circles. While physic gardens were popular throughout continental Europe in the sixteenth century, it was not until 1621 that England established its first physic garden in Oxford.¹⁰⁷ Throughout the seventeenth century, most physic, or 'botanic', gardens were attached to universities and were a space for physicians to learn about the medicinal properties of herbs throughout the course of their training.¹⁰⁸ The Chelsea Physic Garden, founded in 1673 by the Society of Apothecaries to promote the medical study of plants, is

¹⁰⁶ HP 28/2/29A, 'Ephemerides' 1652, Part 1.

¹⁰⁷ Richard Drayton, *Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World* (New Haven: Yale University Press, 2000), p. 9.

¹⁰⁸ Andrew Cunningham, 'The Culture of Gardens', in *Cultures of Natural History*, ed. by N. Jardine, J.A. Secord, and E.C. Spary (Cambridge: Cambridge University Press, 1996), pp. 38-56 (pp. 47-52).

an English example of these professional physic gardens.¹⁰⁹ Though it is possible that some owners of country houses dubbed their modest collections of herbs ‘physic gardens’, most early modern domestic gardens did not have such rigid distinctions and combined herbs used for cookery, medicine and aromatic flavouring.¹¹⁰ However, Beale saw the need for expanding the use of a physic garden beyond such elite circles, and his proposal makes clear that he wanted to equip the greater public with a practical knowledge of both horticulture and medicine, a combination that would yield the greatest benefit.

Lady Ranelagh’s interest in the practical applications of plants was not limited to horticulture, and also concerned agricultural developments. From 1645 to 1648, many members of the Hartlib Circle, including John Dury, Samuel Hartlib, and Sir Cheney Culpeper, were interested in Peter le Pruvost’s proposals for improved techniques of husbandry and fishing, which could be used for overseas colonisation.¹¹¹ Prior to presenting these proposals to Parliament, the correspondents circulated his papers for comments and suggestions. Lady Ranelagh was among those interested in le Pruvost’s proposals, and a letter from John Dury to Sir Cheney Culpeper mentions ‘ye difficultie wch my Lady Ranalaugh did propose unto me concerning Moun^r Pruvosts ordinance’.¹¹² The context of Dury’s letter suggests that Lady Ranelagh was concerned with how an international trading of staple commodities would affect the English market. Culpeper

¹⁰⁹ Chelsea Physic Garden, ‘Our Mission Statement’,

<<http://www.chelseaphysicgarden.co.uk/aboutus/index.html>> Accessed 8 January 2010.

¹¹⁰ C. Anne Wilson, ‘Growing Aromatic Herbs and Flowers for Food and Physic’, in *The Country House Kitchen Garden 1600-1950*, ed. by C. Anne Wilson (Stroud, Gloucestershire: Sutton, 1998), pp. 86-99 (pp. 91-95).

¹¹¹ Dury described Peter le Pruvost as ‘a truly Public spirit, zealous for the Protestant cause’. See HP 12/66A-68B, Copy Letter, John Dury to Hartlib, 30 November 1645. For more on le Pruvost, see Charles Webster, ‘Benjamin Worsley’. The series of letters and proposals related to le Pruvost may be found in HP 12/5-191.

¹¹² HP 12/23A-B, Copy Letter, John Dury to Sir Cheney Culpeper, 25 September 1648.

responded to Dury's letter with reference to Lady Ranelagh's comments and suggestions for further enquiry. He explained:

this Answr leads me to another Question wch I made to my Lady, as yt wch transcends or passes through all his severall propositions, The Qu[estion] is this. How ye certainty p[er] centum wch is disigned to the private adventurer, and the surplusage wch is designed to ye parl[iament] will be secured to them, at least till time and experience have rayased a good opinion of wt is proposed¹¹³

The exchange demonstrates that Lady Ranelagh's opinion was a valued contribution in the circle's assessment of the practical economic benefits to le Pruvost's plans for 'ye improvement of Fishing' and 'the foundation of the Plantation and improovmt of Husbandrie'.¹¹⁴ Culpeper's further question to Lady Ranelagh places her in a position of authority, demonstrating that her previous comments on the proposal were well received and that he assumed she could assist with practical concerns regarding implementing the new project. Her opinion was sought because she could assess both the economic benefits and the practical applications of the proposition, and we must also assume that she was able to understand le Pruvost's innovations in husbandry and fishing in order to properly analyse his proposal and to be respected by Culpeper and Dury.

Such important documents as her transmutation history of Dr Butler and Beale's proposed dedication for a book on physic gardens, together with the multitude of other references to her interest in natural philosophy in the letters of correspondents and in Hartlib's 'Ephemerides', indicate that Lady Ranelagh had active and extensive interest in natural philosophy. Ranging from practical medical applications to treatises on experimental chymistry, Lady Ranelagh's knowledge of natural philosophy was an asset to the Hartlib Circle, as shown in her contribution to various proposals. Along with

¹¹³ HP 12/24A, Copy Letter, Sir Cheney Culpeper to John Dury, 26 September 1648.

¹¹⁴ HP 12/23A-B, Copy Letter, John Dury to Sir Cheney Culpeper, 25 September 1648.

politics, religion, and medicine, natural philosophy should also be added to the list of her interests during her years in the Hartlib Circle.

Beale's proposed dedication to Lady Ranelagh highlights a key element of discourse which I have not yet treated in detail: the ideal of Baconian access to knowledge. His desire to dedicate to her a book on the practical applications of natural philosophy suggests that she shared his goal of Baconian openness. Her original motivation in assisting the Hartlib Circle stemmed from her religious and political beliefs, demonstrated by a letter she wrote to Hartlib in January 1660. Here, she speaks of 'the beginning of our professions to a reformation in these last 18 years' in an explicitly socio-religious context, and suggests that part of the reason the Commonwealth failed was because too much money and energy was expended on military efforts instead of educating children. We must view her practise of natural philosophy as part of her 'professions to a reformation', as it was during her time in the Hartlib Circle when she became interested in it.¹¹⁵ However, while Lady Ranelagh's experimentation is linked to her reform ideology, there is a disjunction between the ideal of openness and the occasional need for secrecy as represented in these Interregnum letters. Sharing the contradictions voiced by her intellectual friends and family members, such as Henry Oldenburg and Robert Boyle, Lady Ranelagh can be found to disparage those who refuse to share their secrets, while at the same time not apologising for her own selection process when disseminating alchemical discourses. In this next section, I hope to show that while Lady Ranelagh and others in her circle employed this Baconian language of open communication, they simultaneously provided themselves with a vocabulary of

¹¹⁵ *Diary and Correspondence of Dr. John Worthington*, pp. 162-77 (p.166).

exclusion based on principles of reputation, including intellectual credentials and social status.

Openness vs. Secrecy in Lady Ranelagh's Interregnum Letters

The Hartlib Circle's plans for social and educational development were fuelled by a primarily Puritan impulse to transform England into a utopian godly society. The 1642 'pact' signed by the original three members of the Hartlib Circle meant that each promised to dedicate their lives 'to the glory of God and the utility of the public', and over the next two decades their diverse projects on practical subjects would continue to stem from this original mission statement.¹¹⁶ One essential step in this process involved open access to all useful knowledge, which Hartlib implemented by collating information in a centralised location which would later be distributed more widely for the public good. The language of 'secrets of nature' and 'books of secrets' had been popular since at least the sixteenth century in continental Europe, but the dialogues only begin to surface with frequency in England with the rise of Baconian openness.¹¹⁷ The reformers believed that the Great Instauration of learning would be coupled with a new understanding of nature itself, as she would reveal her 'secrets'. Yet one prerequisite to achieving the 'New Atlantis', Bacon's utopian scientific society, was open access to all useful knowledge. In order to reach a more authoritative view of nature, everyone (including accredited physicians, chymical adepts, merchants, and lay practitioners) should openly share the secrets they knew. As Hartlib explained in a letter to the mathematician Adolf Tassius, 'it

¹¹⁶ This is taken from the 'pact' signed by Hartlib, Dury and Comenius on 3/13 March 1642. Quoted in Mark Greengrass, 'Archive Refractions: Hartlib's Papers and the Workings of an Intelligencer', in *Archives of the Scientific Revolution: The Formation and Exchange of Ideas in Seventeenth-Century Europe*, ed. by Michael Hunter (Boydell and Brewer, 1998), pp. 35-48 (p. 36).

¹¹⁷ William Eamon, *Science and the Secrets of Nature*, Ch. 10.

is indeed to be deplored that the *Eruditi* do not unite better against the *crassam ignorantiam falsam que Scientiam generis humani*, and communicate one to another truly and without deceit whatever each has found true and good in any parts of human science'.¹¹⁸ This ideal of free communication of knowledge was central to all of Hartlib's plans, and the rhetoric of 'openness vs. secrecy' permeates letters on natural philosophy written by all the key members of the Hartlib Circle, including Lady Ranelagh.

One way Lady Ranelagh contributed to the goal of collective knowledge was by sharing her medical recipes with Hartlib and by helping him to collect information about cures reputed to be successful. Many of these were gathered into Hartlib's diaries, 'The Ephemerides', which may be seen as an extension of the Circle's larger work. While Hartlib amassed an assortment of recipes for everything from foodstuffs to perfumes, it is significant that all but two of the recipes listed in the archive to which Lady Ranelagh's name is attached are for medical cures, demonstrating that her interest in collecting recipes was focussed predominantly on those that were medical.¹¹⁹ Some of these recipes appear to have originated with Lady Ranelagh herself, but many identify her as the source that obtained, or will obtain, them. When Hartlib heard of a new medical cure, he would solicit help from members of his collective to obtain as much information about it as possible. From the late-1640s on, Lady Ranelagh served as one of Hartlib's most reliable informants. This process can be demonstrated by tracking Hartlib's fascination

¹¹⁸ Letter, Hartlib to Tassius, 10 August 1638. BL, Sloane MS 417, fol. 213. Quoted in G. H. Turnbull, *Samuel Hartlib: A Sketch of His Life and His Relations to J.A. Comenius* (London, 1920), p. 22. Translation: it is indeed to be deplored that the Educated do not unite better against the uneducated, ignorant and false Knowledge of humanity.

¹¹⁹ The exceptions are her recipe for a pomander of violets in HP 28/1/54A, 'Ephemerides' 1650 and a recipe for ale which she promises to get from 'Waller the witt' in HP 29/8/9A, 'Ephemerides' 1659. 'Waller the witt' is probably the poet Edmund Waller (1606-1687), a friend of the Boyle family who occasionally annoyed Lady Ranelagh with his gallantry. See *The Early Essays and Ethics of Robert Boyle*, ed. by John T. Harwood (Carbondale, IL: Southern IL University Press, 1991), pp. 67 & 158-59.

with the highly popular recipe, 'The Countess of Kent's Powder', which originated with Elizabeth Grey, Countess of Kent, one of the most highly regarded female lay practitioners of the first half of the seventeenth century.¹²⁰ Though Hartlib does not appear to have known the Countess of Kent personally, he collected over a dozen comments throughout his 'Ephemerides' on the efficacy of 'Lady Kents powder', many of which came from Lady Ranelagh.¹²¹ One example is an entry from the 1649 'Ephemerides':

The Vertues of it. 1. It mightily facilitates Child-bearing. This vertue my Lady Kent herself told the Lady Ranalagh. 2. It cureth Mris Dury of the squinzie in the throat. 3. It's admirable in convulsion fits of Children and others. 4. Admirable in scouring or plague in the guts. 5. Admirable for staying of vomits in the fore-said disease. 6. an excellent sudorifique. 7. procuring sleepe. 8. excellent in burning feavers. In a word, it's a Vniversal Medecin. Lady Ranalagh.¹²²

By adding Lady Ranelagh's name at the end of this list of virtues, Hartlib is citing her as the source of this information, a referencing technique that he employs throughout 'The Ephemerides'. Her name also serves to validate the information, providing a reputable source directly connected to the original practitioner.

In addition to giving Lady Ranelagh information about her famed powder, the Countess also shared with her other medical secrets, which Lady Ranelagh in turn relayed to Hartlib. In the 1649 'Ephemerides', Hartlib said that the Countess told Lady Ranelagh about 'an excellent and never failing Powder for curing the Gout' which the Countess had

¹²⁰ Elizabeth Grey (née Talbot), Countess of Kent (1581-1651), was associated with the popular printed receipt book *A Choice Manuall of Rare and Select Secrets* (1653), the first receipt book printed in England attributed to a woman. See Lynette Hunter, 'Women and Domestic Medicine: Lady Experimenters, 1570-1620', in *Women, Science and Medicine 1500-1700*, ed. by Lynette Hunter and Sarah Hutton (Stroud, Gloucestershire: Sutton, 1997), pp. 89-107.

¹²¹ Jayne Archer, 'Women and Alchemy in Early Modern England' (unpublished doctoral thesis, University of Cambridge, 2000), Ch. 5.

¹²² HP 28/1/50B, 'Ephemerides' 1650, Part 2.

tried upon herself with success.¹²³ Then in 1650, Hartlib said the Countess promised to give Lady Ranelagh ‘the right Receipt’ for the highly popular universal cure Lucatella’s Balsam.¹²⁴ Later that year, Hartlib recorded an observation about Lucatella’s Balsam which notes Lady Ranelagh as the source, where she explained that ‘inwardly taken or back anointed ... the urine will smel of it, which shew's it's penetrating vertue and therfore good for any aches in the back and against Gravel of the stone’.¹²⁵ It may be that by this point Lady Ranelagh had received ‘the right Receipt’ from the Countess and was conducting her own experiments on its effectiveness. This practice (by which Lady Ranelagh collected information from others, conducted a personal trial, and carefully relayed all that she knew to Hartlib) shows a collective effort to advance medical knowledge. By collecting all information about a cure in one place, Hartlib could systematically reach an informed conclusion about the effectiveness of any particular recipe and compare recipes with one another to determine which was most reliable. Open communication could thereby accelerate the process of establishing trustworthiness and allow Hartlib to assemble a reliable compendium of medical cures that might later be offered to the larger public.

However, it appears that not all of Lady Ranelagh's attempts to collect medical secrets met with success. In the ‘Ephemerides’ of 1653, Hartlib included the following tale:

Lady Ranalagh related a wonderful cure done upon a Woman monstrously swollen by the dropsy. which Dr Mayerne prescribing a tap in her belly she was cured by a far easier way by a water of a certain Lady according to a Receipt which the Woman hath now in posession and will not part with it she selling the water for 3 shillings a quart. But the Lady Ranalagh

¹²³ HP 28/1/32B, ‘Ephemerides’ 1649.

¹²⁴ HP 28/1/50B, ‘Ephemerides’ 1650, Part 2.

¹²⁵ HP 28/1/83A-B, ‘Ephemerides’ 1650.

will enquire further of her.¹²⁶

This passage is interesting in relation to the commercial value of medical secrets because while the recipe did not actually originate with the woman who has been cured, she still refused to part with it because she recognised its monetary value. Presumably, she could make more money by keeping the recipe a secret, which would allow her to make and sell quarts of the water. Hartlib ends this story by saying that Lady Ranelagh will pursue this woman further, demonstrating Lady Ranelagh's dedication to collecting these secrets. Since the story is told by Hartlib and not Lady Ranelagh herself, we cannot be sure if the tone and choice of words would have been harsher if it were Lady Ranelagh who relayed the story. Yet since she was particularly eager for proven medical cures to be widely disseminated for the public good, we can assume that this possessive behavior would not sit well with her.

One direct insight into Lady Ranelagh's negative opinion of those who harbour secrets can be found in a letter she wrote to Hartlib on 10 February 1657, where she relayed the following tale disparaging a physician who would not part with his secret:

I am informed of a Surgeon here, who boasts of a Medecin that hee says hee breakes the Stone by without faile. Hee is of the common opinion of loving more to keepe a Secret, then to doe good by publishing it. But hee hase promised to prepare some of the Medecin, and teach the vse of it which I am endeavouring to get from him.¹²⁷

As with the story of the woman cured of the dropsy, Lady Ranelagh hears of a reputed secret and tries to obtain it from the source. By saying this Surgeon '*boasts* of a Medecin',

¹²⁶ HP 28/2/76A-B, 'Ephemerides' 1653, Part 4. Dr Theodore Turquet de Mayerne (1573-1655) appears frequently throughout the Hartlib Papers, and Hartlib also collected his recipes in his 'Ephemerides'. For example, see HP 28/1/55A, 'Ephemerides' 1650, Part 2.

¹²⁷ HP 60/4/13A-14b, Recipes for the Stone. By 'publish', Lady Ranelagh suggests that he should 'make public' this receipt, which could be done by oral communication or manuscript circulation.

she emphasises his selfish, mercenary manner. Her characteristic sarcasm is evident in this critique, in which she makes clear her own opinion that one must prioritise the public good over personal gains. When saying secrecy was ‘the *common* opinion’, she positions the Hartlib Circle’s philosophy of open communication outside, and above, the popular view of secrecy. The statement has an air of intellectual and ethical superiority which, ironically, appears with relative frequency in the letters of those who maintain this Baconian ideal of openness.

By the late 1650s, Lady Ranelagh’s interest in natural philosophy and her dedication to open communication was so explicit that John Beale proposed to dedicate his book ‘A Physique Gaurden’ to her.¹²⁸ The final proposed chapter was entitled ‘An encouragement to Ladyes & Gentlewomen to assiste us in finding out & dressing this unforbidden fruite, In which they may have the happines to excell the greatest of ancient philosophers’. Here, Beale uses the Baconian terminology of ‘the secrets of nature’ when he suggests that women too can help reveal God’s ‘unforbidden fruits’. As stated earlier, Beale also shared the Hartlibian philosophy of open communication of knowledge and he was particularly attracted to Bacon’s idea that agriculture would be the most fundamental of the sciences in creating a useful natural philosophy.¹²⁹ Indeed, immediately after mentioning his proposed dedication to Lady Ranelagh, he adds:

My purpose is to make the study, as well of Ladyes, as of Scholars ...
If I fayle of accomodation to the publique, tis much against my good
meaning. I am very willing to bee an incendiary to inflame the world
with the Love of profitable knowledge. And I scarce knowe any kind
of knowledge more profitable than this.¹³⁰

¹²⁸ HP 25/6/1A-4B, Letter, John Beale to [Hartlib], Undated.

¹²⁹ Stubbs, ‘John Beale’, p. 478.

¹³⁰ HP 25/6/1A-4B, Letter, John Beale to [Hartlib], Undated.

Beale wanted to dedicate the book to Lady Ranelagh partly as a way of encouraging the public, and specifically a female public, to involve themselves in practising physic and maintaining a garden, as he believed that spreading this knowledge would enhance the public good.

While print might seem the most obvious medium in which to disseminate information to the public, Lady Ranelagh deliberately eschewed print publication because of social conventions.¹³¹ However, she was clearly connected to some printed texts that promoted open communication of knowledge, published by male members of the Circle. For example, in addition to Beale's publication, Lady Ranelagh was a motivating force behind many of the early ethical writings that Robert Boyle composed during the late 1640s, and appears to have promoted his essay 'An Epistolical Discourse ... inviting all true lovers of Vertue and Mankind, to free and generous Communication of their Secrets and Receipts in Physick'. The tract was composed in the form of a letter by Philaretus (Boyle) to an anonymous professor of secrets called Empyricus, wherein the former attempts to convince the latter of the public need for openly communicating valuable secrets. Hartlib published Boyle's epistle in 1655 in the compilation *Chymical, Medicinal, and Chyrurgical Addresses*, though Boyle had begun writing it around 1647.¹³² This piece has been described by scholars, most notably Michael Hunter, as a powerful argument against secrecy in natural philosophy — particularly medicine.¹³³ Some evidence of Lady Ranelagh's involvement in the treatise can be found in a letter Robert

¹³¹ See above 'Introduction' for more on the politics of print versus manuscript publication.

¹³² Principe, *Aspiring Adept*, p. 149.

¹³³ Michael Hunter, 'The Reluctant Philanthropist: Robert Boyle and the "Communication of Secrets and Receipts in Physick"', in *Robert Boyle (1627-91): Scrupulosity and Science* (Woodbridge: Boydell Press, 2000), pp. 202-22.

Boyle wrote to her on 2 August 1649. After relaying the details of his illness, Boyle explained:

in the Intervalls of my Fitts I both began & made some Progresse in the promised Discourse of Publicke-Spiritednesse: but now truly Weakenesse & the Doctor's Prescriptions have cast my Pen into the Fire: tho in spite of their Menaces, I sometimes presume to snatch it out a while, & blot some Paper with it.¹³⁴

In this letter, by describing the treatise as ‘the *promised* Discourse of Publicke-Spiritednesse’, Boyle clearly refers to a discourse about which Lady Ranelagh already knew and which he presumed she was awaiting anxiously. This is the same language he would use sixteen years later when dedicating to her his ethical piece *Occasional Reflections*, calling them the ‘unfinished and unpolished ... Trifles you called for’.¹³⁵ Significantly, Boyle was drafting *Occasional Reflections* from 1646 to 1649, meaning that he was writing these two pieces over the same period of time.¹³⁶ Boyle’s tone in this letter is frustrated and almost apologetic, assuring Lady Ranelagh that he is making some progress, but had been hampered by unfavourable circumstances. Yet it is significant that he needed no detailed explanation of the discourse, nor did he need to argue the necessity for it, suggesting that he was speaking to a like-minded person with whom he had previously discussed matters of secrecy.

On the surface, the material presented thus far suggests that Lady Ranelagh saw the public benefits of openly communicating secrets, particularly those proven successful. She contributed roughly twenty-five secrets to Hartlib’s collection and actively searched for details to contribute to his incomplete recipes. She has been shown also to pursue individuals who claimed that they would not part with a secret and she deemed selfish

¹³⁴ *Correspondence of Boyle*, I, pp. 79-82 (p. 80).

¹³⁵ Boyle, *Occasional Reflections*, sig. A3v.

¹³⁶ John T. Harwood, ‘Introduction’, in *The Early Essays and Ethics*, p. xx.

those who chose to keep a secret ‘a secret’. Exalting the benefits of openness appears to be a consistent theme found in most references to her in the Hartlib Papers archive, suggesting her utilitarian opinions remained relatively static and optimistic throughout the Interregnum, and were in line with those held by other members of the Hartlib Circle.

However, while open communication was always the end goal of the Hartlib Circle’s projects, there were occasional letters between members that required secrecy. There has been some recent research into this paradox, though these analyses generally attempt to create a harmonious picture that preserves the Hartlibian ideal of open access and free communication.¹³⁷ Yet some of their uses of secrecy cannot, and should not, be coded as indirect paths towards openness; instead, a more helpful line of enquiry is to explore these contradictions to determine where points of conflict emerge. In his analysis of Sir Cheney Culpeper’s involvement in the Hartlib Circle, Stephen Clucas offered one of the most sensitive assessments of this complicated topic by stating clearly that ‘Hartlib did not dispense with the hermetic injunction of secrecy’.¹³⁸

Hartlib’s use of secrecy is exhibited in a letter that he wrote to John Winthrop the younger in March 1660.¹³⁹ This verbose epistle frequently juxtaposes ideals of openness and secrecy, epitomising the incongruities evident in the philosophy of the Circle as a whole. Hartlib begins his letter with enthusiasm and speaks of Dr Küffler’s ‘many excellent and usefull inventions ... which the publick should take notice of’. Yet nearly halfway through this letter, Hartlib’s tone makes an abrupt shift towards concealment, with a cautious observation that ‘the method of communication must first be better

¹³⁷ For example, see Gerhard F. Strasser, ‘Closed and Open Languages: Samuel Hartlib’s Involvement with Cryptology and Universal Languages’, in *Samuel Hartlib & Universal Reformation*, pp. 151-161.

¹³⁸ Stephen Clucas, ‘The Correspondence of a XVII-Century ‘Chymicall Gentleman’: Sir Cheney Culpeper and the Chemical Interests of the Hartlib Circle’, *Ambix*, 40 (1993), 147-70 (148).

¹³⁹ HP 7/7/1A-8B, Copy Letter, Hartlib to John Winthrop the Younger, 16 March 1660.

chalked out between us'. From this point on, the letter is filled with references to 'secret friends' and 'secret philosophers', suggesting that even Hartlib realised the need for keeping some information within a select circle of friends. The letter concludes with Hartlib's interesting plea: 'I intreat you again <and again> to keep all these <things> secret'. In Hartlib's letter, the need for secrecy is in no way directly related to the goal of openness, but instead the letter is split with each half promoting a system of contradictory values.

Similar promotions of secrecy can be found in the letters of other members of the Hartlib Circle who generally professed a commitment to openness. Many of the letters John Dury wrote to Hartlib on a wide range of topics included a phrase such as 'keep it to yowr self as a secret', often with little or no explanation of why this secrecy was necessary.¹⁴⁰ Benjamin Worsley, who was heavily involved in many of Hartlib's most ambitious projects for social reformation and for extending access to useful information, was so secretive of his knowledge that John Moore wrote to Hartlib, 'I thought you had better known, then to think he [Worsley] would impart his secrets to any one'.¹⁴¹ Even the most altruistic of the reformers occasionally maintained and promoted secrecy within their selective circle of virtuosi.

One place where Lady Ranelagh's name is connected to secrecy can be found in a letter Henry Oldenburg wrote to Hartlib in July 1659, mentioned earlier, in which he said:

I send you here inclosed a Chymicall proces <of vitrioll> (in acknowledgement of the secret you sent me, which shall not loose the

¹⁴⁰ Letter, John Dury to Hartlib, 8 September/29 August 1644. Hartlib Papers 3/2/57A-B. For further examples, see Letter, John Dury to Hartlib, 1646, Hartlib Papers 3/3/21A-B and Letter, John Dury to [Hartlib], 24 May/3 June 1661, Hartlib Papers 4/4/20A-21B.

¹⁴¹ Letter, John Moore to Hartlib, 28 July 1645. Hartlib Papers 21/8/3A-B. For more on Worsley, see Charles Webster, 'Benjamin Worsley: Engineering for Universal Reform from the Invisible College to the Navigation Act', in *Samuel Hartlib & Universal Reformation*, pp. 213-235.

name of a secret for me) And intreat you, to communicate it to none, but noble Mr Boyle, who, I am sure, upon my desire will impart it to none but MyLady Ranalaugh, which is a person, that can keep a secret as well, as any I know.¹⁴²

By describing Lady Ranelagh as one who can ‘keep a secret as well, as any I know’, Oldenburg suggests both that he had previously communicated secrets with her and that she can maintain secrecy. William Eamon has used this letter to illustrate that ‘secrets were tokens of exclusiveness and privilege, distinguishing those who could “keep a secret” from those who could not. Exchanging secrets within privileged circles gave Oldenburg, and Hartlib, both clients of Boyle, tacit membership in elite society’.¹⁴³ Eamon correctly identifies how ‘secret’ knowledge was transmitted through restricted circles; however, when reading this passage within the context of this chapter, it becomes clear that we must include Lady Ranelagh as a part of this ‘elite society’, as well.

Yet this exchanging of secrets between Oldenburg, Hartlib, Boyle and Lady Ranelagh sits awkwardly against the backdrop of their public promotion of the open communication of knowledge. Oldenburg's perception of Lady Ranelagh is different from the image of herself that she created. This suggests that, like the Hartlib Circle as a whole, Lady Ranelagh probably maintained a complex personal philosophy regarding openness — one that allowed her to publicly extol the benefits of free communication of knowledge, but privately to find an occasional need to demonstrate her ability to keep a secret. But how can someone who has been shown to be critical of others for not sharing their secrets be herself a proponent of secrecy?

The answer lies in the fact that Oldenburg's secret did not result in a practical medical application fit for the public at large, but instead describes an alchemical

¹⁴² HP 39/3/25A-27B, Letter, Henry Oldenburg to Hartlib, with Enclosure, 5 July 1659.

¹⁴³ Eamon, *Science and the Secrets of Nature*, p. 345.

experiment in chrysopeia and argyropoeia.¹⁴⁴ Since there was not a direct public benefit, as there would be with a proven medical cure, the members of this circle were exempt from public responsibility. Instead, they entered the alchemical world of esotericism, which held very different rules. Many members of the Hartlib Circle held paradoxical views of secrecy, whereby they were intolerant of those who kept medical recipes a secret, but they themselves participated in the exclusive exchange of alchemical secrets. As William Eamon has noted, ‘Boyle’s attitudes toward disseminating alchemical information was [sic] extremely ambivalent. Recent research suggests that Boyle was strongly influenced by the traditional view of alchemy as privileged knowledge, and by moral injunctions against revealing alchemical secrets to the vulgar’.¹⁴⁵ If everyone knew how to transmute base metals into gold, the value of gold itself would collapse, leaving the whole economy in ruins; therefore, such knowledge must be kept within selective circles of trustworthy individuals. Oldenburg’s letter suggests that Lady Ranelagh either held similar discerning criteria for divulging alchemical secrets, or at least she knew that she must obey such dictates for secrecy when participating in such exclusive circles.

The evidence shows that Lady Ranelagh participated in Hartlib’s attempts to collect information into a central location as a means of most effectively advancing public knowledge and welfare. However, Lady Ranelagh was also well-versed in the esoteric language of the adepti and knew when and with whom she should demonstrate her ability to ‘keep a secret’. The Baconian language of secrecy allowed these reformers

¹⁴⁴ Chrysopeia is the process of transmuting base metals into gold and argyropoeia is the process of transmuting base metals into silver. See Lawrence Principe, *The Aspiring Adept*, p. 9. Though this process of vitriol specifies transmuting base metals into gold, it is important to note that there were also medical benefits to such chymical processes. According to Hartlib’s ‘Ephemerides’ of 1650, ‘Spirit of Tartar and Spirit of Vitriol counted of Paracelsus wonderful Medecins and of the most penetrating efficacy whatsoever’. See HP 28/1/50B, ‘Ephemerides’ 1653, Part 1.

¹⁴⁵ Eamon, *Science and the Secrets of Nature*, p. 342.

to criticise ‘the common’ people in the name of ‘the public good’ if they would not share their recipes, while it simultaneously provided them with a tacit vocabulary for identifying those worthy of exchanging exclusive alchemical discourses. Perhaps future research sensitive to the social history of alchemy can clarify how this practice of exclusion can even appear in the works of the most pious and charitable of the reformers, as seen here through an analysis of Lady Ranelagh.

Conclusion

This chapter has demonstrated that Lady Ranelagh was an active and full member of the Hartlib Circle, and was considered by fellow members to be an authority on multiple subjects, including various branches of natural philosophy. She participated in many of the key philosophical conversations taking place in one of the most prolific and far-reaching intellectual networks of the 1640s and 1650s. But how typical was such participation for a woman in this period, and in the Hartlib Circle specifically? Was her learning atypical of an aristocratic woman? Did her correspondence maintain the same level of sophistication and intellectual engagement after the Restoration? To answer these questions, we must consider the evidence presented in this chapter along with the larger body of Lady Ranelagh’s manuscripts within a gendered framework of seventeenth-century intellectual history.

Chapter 3: Lady Ranelagh and the Gender Politics of Science in Seventeenth-Century England

When the monarchy was restored in 1660, the hopes of instilling a religio-scientific utopia in England diminished and many radical groups of the Interregnum disintegrated. The Hartlib Circle was among these failed projects, for their agenda appeared amateur and inappropriate to the more conservative environment of Restoration natural philosophy. The highly organised ‘Royal Society for Improving Natural Knowledge’ was founded in London in 1660, though it was not granted a royal charter until 1662.¹ Similar academies were simultaneously being founded across Western Europe, including the *Accademia del Cimento* in Florence in 1657, the *Académie des Sciences* in Paris in 1666, and the *Societät in Teutschland zu aufnehmen der Künste und Wißenschafften* in 1669.² While the original proposal for the Royal Society included some attachment to the Baconian openness and empirical organisation of knowledge, popular in the previous two decades, royal funding meant that politics and religion had to be kept separate from the developing field of experimental science.³ This fostered a serious commitment to objective observation and the establishment of truth, which

¹ Justin Stagl, *A History of Curiosity: The Theory of Travel 1550-1800* (Chur: Harwood, 1995), p. 143; R.E.W. Maddison, *The Life of the Honourable Robert Boyle* (London: Taylor & Francis, 1969), pp. 98-100.

² Stagl, *History of Curiosity*, pp. 147-48.

³ William Eamon, *Science and the Secrets of Nature: Books of Secrets in Medieval and Early Modern Culture* (Princeton: Princeton University Press, 1994), pp. 345-50.

developed further in the 1670s and 1680s when the younger generation of scientists, such as Isaac Newton (1643-1727), became involved in the Royal Society.⁴

Some members of the Hartlib Circle, such as Robert Boyle and Sir William Petty, went on to become Founder Fellows of the Royal Society, and many more of Hartlib's associates, including Henry Oldenburg and John Beale, were elected as Fellows within its first few years.⁵ Though Lady Ranelagh was well respected in several overlapping intellectual networks of the previous two decades, and though she was connected to the Royal Society through family and friends (Robert Boyle was a Founder Fellow and Henry Oldenburg was elected as the Society's first secretary), she was not involved with the Society in any formal way. The increased prestige of science meant a decrease in the diversity of experimenters. While women had previously been able to participate in informal scientific circles, across Europe they were excluded from membership of these new societies. It is this moment in the seventeenth century (when science became institutionalised) that feminist historians of science, mostly significantly Londa Schiebinger, have identified as the 'turning point' when women were excluded from the profession.⁶

⁴ Stagl, *History of Curiosity*, pp. 148-50. On the development of 'truth' in the Restoration, see Steven Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago: University of Chicago Press, 1994) and Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle and the Experimental Life* (Princeton: Princeton University Press, 1985).

⁵ Among the twelve men known as Founder Fellows, or Original Fellows, of the Royal Society were the following members of the Hartlib Circle: Robert Boyle, Sir William Petty, Theodore Haak, and John Wilkins. Associates of the Hartlib Circle who joined the Royal Society within the first few years of its existence include Henry Oldenburg, John Beale, John Wallis, John Winthrop the Younger, and Sir Kenelm Digby. See Michael Hunter, *The Royal Society and Its Fellows, 1660-1700: The Morphology of an Early Scientific Institution*, 2nd edn (Oxford: British Society for the History of Science, 1994) and Charles Webster, *The Great Instauration: Science, Medicine and Reform, 1626-1660* (London: Duckworth, 1975), esp. Ch. 2.

⁶ Londa Schiebinger was the first to present this model, and it has since been used by many historians of gender and science. Londa Schiebinger, *The Mind has no Sex?: Women in the Origins of Modern Science* (Cambridge, MA: Harvard University Press, 1989).

While the earliest feminist work on the history of women and science had focused on gendered metaphors of exploiting nature, found in the writings of Francis Bacon and in the works of the experimental scientists that followed him, Londa Schiebinger published what has been seen as the foundational study of women's material practice of early modern science.⁷ She presented an overview of the birth of scientific academies across Western Europe and showed how this institutionalisation in the late-seventeenth century coincided with the exclusion of scientific women who had often participated in the informal networks that existed prior to the formation of formal societies. Since her groundbreaking work, many historians of women and science have found new evidence of women's involvement in the sciences throughout the seventeenth century, which suggests that some modifications are needed to Schiebinger's universal model.⁸ Most of this research has centred on women's domestic work, arguing that though women were excluded from formal academies they continued preparing medicines, perfecting chymical techniques, debating the latest philosophies, and trying new scientific instruments, all by using the household as a place of experiment and learning.⁹

The only Englishwoman to have been considered as a case-study of how women's involvement in science changed over the course of its professionalisation in the

⁷ Schiebinger, *The Mind has no Sex?*. Early feminist studies on gender and nature include Evelyn Fox Keller, *Reflections on Gender and Science* (New Haven, CT: Yale University Press, 1985) and Carolyn Merchant, *The Death of Nature: Women, Ecology and the Scientific Revolution* (San Francisco: Harper & Row, 1980).

⁸ See the many excellent essays in Hunter and Hutton's *Women, Science and Medicine* and Zinsser's *Men, Women, and the Birthing of Modern Science*.

⁹ Lynette Hunter, 'Women and Science in the Sixteenth and Seventeenth Centuries: Different Social Practices, Different Textualities, and Different Kinds of Science', in *Men, Women and the Birthing of Modern Science*, pp. 123-140; Steven Shapin, 'The House of Experiment in Seventeenth-Century England', *Isis*, 79 (1988), 373-404; Jayne Archer, 'Women and Alchemy in Early Modern England' (unpublished doctoral thesis, University of Cambridge, 2000).

seventeenth century is Margaret Cavendish, Duchess of Newcastle.¹⁰ Cavendish published several natural philosophical books in the latter half of the century and was the first woman allowed to witness an experiment at the Royal Society. Studies on her either argue for the seriousness of her work or present contemporaries' rejection of her contribution as proof of the misogyny inherent in early modern science — or offer some combination of these two approaches.¹¹ However, it must be noted that Margaret Cavendish was famously eccentric and was in no way representative of most elite seventeenth-century Englishwomen. Francis Harris aptly summarised the main problem: 'The Duchess of Newcastle was unusual for a woman of her time in her lack of recourse to conventional piety'.¹² As I will argue later in this chapter, Margaret Cavendish should not be used as a case study for early modern gender and science because of her unconventional self-promotion, partly demonstrated by her lack of inhibition to print her scientific treatises.

The only in-depth study of Lady Ranelagh's involvement with natural philosophy over the course of the seventeenth century is an essay by Lynette Hunter, which deserves a detailed discussion here because it is the only such study and is often cited in subsequent research on early modern women and science. Hunter acknowledges that Lady Ranelagh was in frequent correspondence with Hartlib and his associates

¹⁰ Born around 1623 as Margaret Lucas, she later became Margaret Cavendish, Duchess of Newcastle, through her marriage to William Cavendish in 1645. A zealous Royalist, she was known for her eccentric dress and actions, and wrote poetry, plays and treatises on natural philosophy. She died in 1673.

¹¹ Schiebinger, *The Mind Has No Sex?*, esp. pp. 25-26, 47-59; Sarah Hutton, 'In dialogue with Thomas Hobbes: Margaret Cavendish's Natural Philosophy', *Women's Writing*, 4 (1997), 421-32; Peter Dear, 'A Philosophical Duchess: Understanding Margaret Cavendish and the Royal Society', in *Science, Literature and Rhetoric in Early Modern England*, ed. by Juliet Cummins and David Burchell (Aldershot: Ashgate, 2007), pp. 125-43; Hilda L. Smith, 'Margaret Cavendish and the Microscope as Play', in *Men, Women and the Birthing of Modern Science*, pp. 34-47; and see the essays in the 'Natural Philosophy' section of *A Princely Brave Woman: Margaret Cavendish, Duchess of Newcastle*, ed. by Stephen Clucas (Aldershot: Ashgate, 2003), pp. 185-254.

¹² Frances Harris, 'Living in the Neighbourhood of Science: Mary Evelyn, Margaret Cavendish and the Greshamites', in *Women, Science and Medicine*, pp. 198-217 (p. 211).

throughout the 1640s and 1650s, and she shows that from 1660 these men were allowed to participate in the Royal Society while Lady Ranelagh was not. Yet Hunter's main argument is that Lady Ranelagh made medicines in her kitchen and still-room, exemplifying the rise in the practices 'Kitchen-Physick' and 'Ladies' Chemistry' during the mid- to late-seventeenth century, when the first receipt books by and for women were printed in England. However, since the publication of this essay, many more of Lady Ranelagh's letters have been found and more research has been conducted on the few sources Hunter used, which have exposed some errors in her introductory piece. For example, she unquestioningly assumes Wellcome Library Western MS 1340 and British Library Sloane MS 1367 were compiled by Lady Ranelagh because of references in the corresponding library catalogues, and she bases assumptions about Ranelagh's collaborative work with Thomas Willis and Robert Boyle on these erroneous attributions. As I will discuss in the next chapter, neither receipt book is actually in her hand, and reading a receipt book for evidence of actual use must be done with extreme caution. Hunter also suggests that Lady Ranelagh's 'receipts were published under the name of Thomas Willis and Robert Boyle, and no doubt many others', but she offers no evidence for this; the sources listed in the footnotes do not support her argument.¹³ Her essay was based on a tiny sampling of Lady Ranelagh's letters in the Hartlib Papers and on the two receipt books associated with her. A far more comprehensive examination of Lady Ranelagh's involvement in natural philosophy has become possible now that numerous additional manuscripts have been located.

¹³ Hunter, 'Sisters of the Royal Society', p. 191. The books are Thomas Willis, *Pharmaceutice Rationalis (Part I): Or an exercitation of the operations of medicines in humane bodies* (London, 1684) and Robert Boyle, *Medicinal Experiments or a Collection of Choice Remedies for the most part Simple and Easily Prepared* (London, 1692).

This chapter will offer an overview of Lady Ranelagh's practice of natural philosophy throughout her life, and will consider how her gender may have shaped or limited her knowledge and experimentation with the subject. I will begin with an overview of her work with the Hartlib Circle, to assess how far her knowledge was typical of elite women and carefully consider the few gendered references made about her by her male colleagues during the Interregnum. This will be followed by a section on the Restoration, a period for which we have very little evidence of her involvement in any form of natural philosophy aside from medicine. The final section will analyse the changes in her scientific practice and knowledge over the course of her life, considering how far the professionalisation of science may have redefined her experimental practice. While I will situate my discussion of Lady Ranelagh within a larger framework of the gender politics of early modern science, I will also consider her interest in natural philosophy against her evolving personal belief system as it is evidenced by her extant letters. I will argue that while gender restrictions may be partly responsible for her diminished role within natural philosophy after the Restoration, her changing socio-political mindset suggests that there were also personal religious reasons why she turned her attention to new subjects in this more conservative climate.

Women and Science in England: 1640-60

Most of Lady Ranelagh's extant correspondence during the Civil Wars and Interregnum has been preserved in the Hartlib Papers. Throughout these two decades, she contributed to discussions on a range of natural philosophical topics which were taking place among the Hartlib Circle, and she was considered by all to be a source of

intellectual authority. There is not one place in the archive where her name is linked with distrust, or when the veracity of her statements is questioned. Moreover, there are a number of extant letters between her and her brother Robert Boyle between 1645 and 1659, comprising eight from Lady Ranelagh to Boyle and seven from him to her.¹⁴ These manuscript sources will be examined for evidence of Lady Ranelagh's participation in natural philosophy during these 'egalitarian' years prior to the institutionalisation of science.

Throughout the seventeenth century, women were allowed and even encouraged to pursue several branches of practical science which would perfect useful skills that could be applied to their work as household managers. Basic mathematics, medicine and chymistry were all part of the elite housewife's responsibilities, a knowledge of which was required in order to take care of her family, servants, and members of her community.¹⁵ While Lady Ranelagh's Hartlibian activities overlapped with some of these approved technical skills, she usually explored these subjects at a more advanced level — one more appropriate to a male virtuoso than to a housewife.

One of the scientific subjects to which Lady Ranelagh's name is attached most often in the Hartlib Papers is chymistry. Since chymistry began as a practical discipline, we can identify several women throughout history who had practised it. In fact, the earliest chymists for whom we have names were women working on perfumes in Mesopotamia in 1200 BC.¹⁶ In seventeenth-century England, gentlewomen were

¹⁴ See Volume 1 of *The Correspondence of Robert Boyle*, ed. by Michael Hunter, Antonio Clericuzio, and Lawrence M. Principe, 6 vols (London: Pickering and Chatto, 2001). There are references in these letters to other letters that have been lost, but I have only noted those that are extant.

¹⁵ Christina Hole, *The English Housewife in the Seventeenth Century* (London: Chatto & Windus, 1953); Alison Sim, *The Tudor Housewife* (Stroud, Gloucs: Sutton, 1998; repr. 2000).

¹⁶ Jane A. Miller, 'Women in Chemistry', in *Women of Science: Righting the Record*, ed. by G. Kass-Simon and Patricia Farnes (Bloomington: Indiana University Press, 1990), pp. 300-34.

expected to have some knowledge of practical chymistry in order to perform the duties of a housewife. Jayne Archer has shown that many elite women, ‘by virtue of their work in the household, were experts in the alchemical processes of sublimation, fermentation, calcination, and distillation’.¹⁷ While women’s receipt books often included instructions for chymical preparations, particularly in recipes for iatrochemistry and sugar-craft preparations, there is little direct evidence of seventeenth-century Englishwomen discussing and practising chymistry for less utilitarian purposes. In a letter that John Beale wrote to Hartlib in March 1659, he refers to this practice as ‘the vulgar Art of Lady-Chymistry’, clearly distinguishing between the experimental chymical methods of the virtuosi and the more practical applications of the subject by women.¹⁸ Chymical experimentation that could result in one of the most important theories of the seventeenth century, such as Boyle’s Law of Gases, would not have been an appropriate feminine pursuit.¹⁹

Lady Ranelagh’s correspondence during the 1650s suggests that she had an interest in chymistry that reached much wider than that of most seventeenth-century Englishwomen. While she did collect and exchange chymical recipes, as will be discussed in the following two chapters on medicine, she was also an active correspondent in at least two sophisticated chymical exchanges with men who would become authorities on the subject in the following decades. In order to analyse the possible gendered implications of her knowledge, we must revisit two letters written in

¹⁷ Jayne Archer, ‘A “Perfect Circle”? Alchemy in the Poetry of Hester Pulter’, *Literature Compass*, 2 (2005): 1-14.

¹⁸ Letter, John Beale to Samuel Hartlib, 26 March 1659. HP 51/102A-106B.

¹⁹ Boyle’s Law of Gases shows that absolute pressure and volume are inversely proportional in a closed system kept at a constant temperature. For an interesting, though certainly not unproblematic, discussion of how gender biases are inherent in Boyle’s Law, see Elizabeth Potter, *Gender and Boyle’s Law of Gases* (Bloomington: Indiana University Press, 2001).

1659 and mentioned in the previous chapter: Henry Oldenburg's letter to Hartlib (which explained that the enclosed 'secret' Method of the Spirit of Vitriol may be shared only with Boyle and Lady Ranelagh) and Lady Ranelagh's letter to Hartlib (which included a transmutation history of the famed alchemist Dr Butler).²⁰

In July 1659, Henry Oldenburg sent Hartlib a letter which included a sophisticated chymical recipe in Latin as an enclosure. Oldenburg explained to Hartlib:

I send you here inclosed a Chymicall proces <of vitrioll> (in acknowledgemt of ye secret you sent me, wch shall not loose the name of a secret for me) And intreat you, to communicate it to none, but noble Mr Boyle, who, I am sure, upon my desire will impart it to none but MyLady Ranalaugh, wch is a person, yt can keep a secret as well, as any I know.²¹

The enclosed 'Processus in opere philosophico Vitrioli', which was described in detail in the previous chapter, is a complicated chymical procedure to be carried out over several months, and which requires specialist chymical instruments and a knowledge of standard chymical procedures. The resulting substance could allegedly change mercury and lead into silver, evidencing a transmutation of matter which most contemporary chymists were trying to produce. Oldenburg knew that Boyle would show this recipe to his sister and suggests that he had previously shared secrets with Lady Ranelagh, thereby providing evidence of her interest in transmuting metals. This may be supported further by a letter she wrote to Hartlib three months earlier, which offers some of the only evidence of her chymical knowledge written in her hand.

In April 1659, Lady Ranelagh sent Hartlib an account of what she knew about the famed alchemist 'Dr Butler', which was discussed in detail in the previous chapter. She

²⁰ Letter, Henry Oldenburg to Hartlib, with Enclosure, 5 July 1659, HP 39/3/25A-27B (25B); Letter, Lady Ranelagh to Samuel Hartlib, 5 April 1659, Yale University, Beinecke Library, Osborn MS 16789.

²¹ Letter, Henry Oldenburg to Hartlib, with Enclosure, 5 July 1659, HP 39/3/25B. Words in < ... > are Hartlib's additions to the letter.

explains in detail and with authority the story of a doctor who knew how to transmute base metals into gold, and the letter was copied and circulated among the circle. I have argued that her narrative is an example of a ‘transmutation history’, a literary and scientific genre that became popular during the seventeenth century.²² Because this genre operated under the established scientific format for verification, such as the need to include identifiable dates and names, Lady Ranelagh’s name was attached to scribal copies in order to lend credibility to the account.²³ This lengthy letter therefore not only adds further evidence that Lady Ranelagh was interested in this branch of chymistry, but also suggests that members of her circle considered her to be a reliable witness of chymical experimentation.²⁴

Transmuting metals was privileged knowledge, and something which should not reach the hands of the vulgar in case they attempted to counterfeit currency. Lawrence Principe has noted that there was a ‘statute dating from the reign of Henry IV, which seemed to outlaw the transmutation of metals into gold and silver’ that was active in England until Robert Boyle finally procured a repeal of the Act in 1689.²⁵ The consideration of alchemy as privileged knowledge is a recurrent theme in the Hartlib Papers, demonstrating that even these egalitarian reformers believed that some

²² William Newman, *Gehennical Fire: The Lives of George Starkey*, (Cambridge, MA: Harvard University Press, 1994), pp. 3-5. The definition for ‘transmutation history’ is given above in Chapter 2, where this document is discussed at more length.

²³ Her name is signed at the end of this letter, and as I have argued in the previous section based on Hartlib’s corrections to spelling, capitalisation and punctuation, part of her accompanying letter was included with this narrative when it circulated. Further evidence that her name remained on copies of this narrative may be found in a letter from Hartlib to John Winthrop the younger, who was residing in New England. In this letter, Hartlib says, ‘I have sent you a copy of a true relation concerning ye famous Buttler written unto me by a most incomparable lady (Viscountess Ranalaugh) of an Irish extraction’. Copy Letter in Scribal Hand ?, Hartlib to John Winthrop the Younger, 16 March 1660. HP 7/7/1A-8B.

²⁴ For more on the credibility of witnesses being linked to establishing ‘truth’ and fact, see Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle and the Experimental Life* (Princeton: Princeton University Press, 1985) and Steven Shapin, *A Social History of Truth*.

²⁵ Lawrence M. Principe, *The Aspiring Adept: Robert Boyle and his Alchemical Quest*, (Princeton: Princeton University Press, 1998), p. 11.

knowledge should remain only within a selective circle of morally sound and socially elite individuals. Since the ability to transmute metals resulted in little practical benefit, it was not a branch of chymistry deemed suitable for women. Though most virtuosi appear to have had some active or passive interest in transmuting metals, there is very little evidence of seventeenth-century Englishwomen being interested in the subject. Indeed, women could face danger if they incorporated metals into their domestic chymistry, and Margaret Pelling has found evidence of female lay-practitioners being prosecuted for using metals in their production of household medicines.²⁶

Lady Ranelagh's interest in chymistry therefore appears highly atypical, suggesting her knowledge of the subject may have been more on a par with her male contemporaries than with fellow gentlewomen. While there is no solid evidence that she ever tried transmuting metals, she certainly maintained a public profile as a woman interested in the subject, and she corresponded with some of the leading men experimenting with it. Perhaps just as important, there is nothing in the Hartlib Papers archive which gives any indication that her contemporaries — male or female — thought her interest in the subject was inappropriate for a woman. Instead, her name is invoked as a reliable source of authority (as shown with the scribal publication of her transmutation history) and she was encouraged by the virtuosi to continue collecting rare chymical recipes which claimed no practical benefit (as shown in Oldenburg's letter to Hartlib). The Hartlib Circle appears to have been an intellectual environment where some exceptional women, such as Lady Ranelagh, could participate with men as equals.

²⁶ Margaret Pelling, 'Thoroughly Resented? Older women and the Medical Role in Early Modern London', in *Women, Science and Medicine*, pp. 63-88 (p. 74).

This example of Lady Ranelagh being exempt from criticism, even when she ventured beyond the intellectual boundaries prescribed for her sex, may be paralleled for almost every branch of natural philosophy in which she was interested, including mathematics. When the mathematician Robert Wood was considering a proposal to decimalise the currency in 1657, he sent his papers to be considered by Hartlib, Miles Symner, William Petty, ‘ye Mathematick Professors’ and Lady Ranelagh.²⁷ Though Wood had been losing faith in the proposal, he renewed interest in the project when he heard the ‘excellent judgement [of] my Lady Ranulaugh’ who ‘was pleased to passe a sentence of approbation upon it, as to publick use’.²⁸ As with chymistry, while elementary arithmetic would be expected of a gentlewoman in order to maintain a household, mathematical proposals that considered a restructuring of the currency in order to advance the public good were far removed from normal female knowledge. Yet Wood took very seriously Lady Ranelagh’s opinion on the subject, and he placed her ‘excellent judgment’ alongside that of some of the foremost mathematicians of the seventeenth century without feeling the need to distinguish between her feminine opinion and their masculine reasoning.

Lady Ranelagh’s interest in the new scientific instruments being used in various disciplines is also mentioned by members of the Hartlib Circle without criticism. Hartlib notes in his ‘Ephemerides’ of 1653 that Lady Ranelagh owned ‘A watch-dial without a clock to bee hung on a wall made by [*blank*] over St Dunstans one of the best

²⁷ For references to these people having read and approved his papers, see HP 33/1/13A-14B, Letter, Robert Wood to Hartlib, 8 April 1657 and HP 33/1/23A-24B, Letter, Robert Wood to Hartlib, 1 August 1657. HP 33/1/13A-14B, Letter, Robert Wood to Hartlib, 8 April 1657. For a brief biography of Miles Symner and William Petty, see Chapter 1, above.

²⁸ HP 33/1/13A, Letter, Robert Wood to Hartlib, 8 April 1657.

clockmakers', which she had received as a gift from Lady Ormond.²⁹ Clocks saw rapid developments throughout the seventeenth century and were of interest to those active in the fields of mathematics, astronomy, navigation and surveying.³⁰ Hartlib's reference is obscure, but it might refer to an equation clock, which exhibited the difference between mean and apparent solar time instead of aiming to precisely measure temporal time. Ultimately, it shows that Lady Ranelagh was collecting new scientific instruments that were fashionable in her day. A letter from John Beale to Hartlib in 1659 confirms that she was known to be interested in other scientific instruments being developed. Beale remarks, 'You may tell her [Lady Ranelagh] of all our Optical Instruments coming abroad, & almost fitted for her own hand, & use'.³¹ The larger context of the letter shows that Beale is referring to a telescope, a scientific instrument with which he conducted many well-received experiments and on which he became known as an authority. While the two most important optical instruments developed in the seventeenth century — the microscope and the telescope — would become available on the open market after the Restoration and 'could be afforded by more affluent families' in England, this reference to Lady Ranelagh's interest in the telescope in 1659 makes her one of the

²⁹ HP 28/2/72B, 'Ephemerides' 1653, Part 4. Lady Ormond is Elizabeth Butler (née Preston) (1615-1684), who was married to James Butler (1610-1688), first Duke of Ormond. Like Lady Ranelagh, she was living in Ireland when the rebellion broke out in 1641, and she spent most of the 1640s and 1650s trying to gain some financial support from Parliament and Cromwell. See entry for 'Elizabeth Butler (1615-1684), Duchess of Ormond and *suo jure* Lady Dingwall' in *ODNB*.

³⁰ Lisa Jardine, *Ingenious Pursuits: Building the Scientific Revolution* (London: Abacus, 2000), esp. Ch. 4; David Christianson, *Timepieces: Masterpieces of Chronometry* (Newton Abbot, Devon: David & Charles, 2002), pp. 44-45; Clare Vincent, 'European Clocks in the Seventeenth and Eighteenth Century', in *Heilbrunn Timeline of Art History* (New York: The Metropolitan Museum of Art, 2000) <http://www.metmuseum.org/toah/hd/clck/hd_clck.htm> [Accessed 21 April 2009].

³¹ HP 51/102A-106B (102B-103A), Letter, John Beale to Hartlib, 26 March 1659. Though the woman is unnamed, the reference must be to Lady Ranelagh because she is the only woman who is mentioned consistently in the correspondence between Beale and Hartlib with respect to theological and scientific matters.

earliest known women to have been interested in the instrument.³² As with her experimentation with chymistry and her knowledge of mathematics, her interest in collecting and trying new scientific experiments was accepted by her male contemporaries without any hint of disapproval.

An overview of the references related to Lady Ranelagh's interest in natural philosophy as evidenced by the Hartlib Papers suggests that her gender did not limit the range of subjects she could explore, nor did it mean that her correspondents valued her opinion less than a man's. This appears to have been the case in several different branches of natural philosophy and medicine, the latter subject being discussed in more detail in Chapter 5. There is only one place in the Hartlib Papers where her gender may have been called into question, and the elusive nature of the statement requires a detailed examination.

In the late 1650s, John Beale sent to Hartlib his proposals for two horticultural books: 'A Physique Garden' and 'A Garden of Pleasure'.³³ The proposals contain a list of chapter titles for each book, and there is an accompanying note wherein Beale says he would like to print these texts to benefit the public. The book on physic gardens aimed to transform Francis Bacon's philosophies of cultivating nature into a practical horticultural guide. He told Hartlib that he intended to 'bestowe a preface on it, or a dedication to the right honorable the Vi[scountess] Ra[nelagh] in Ireland'.³⁴ After this, he added the caveat, 'If you thinke the subject not unfit for a Lady'. He further explained that his, 'purpose is

³² Ruth Watts, *Women in Science: Social and Cultural History* (Abingdon, Oxon: Routledge, 2007), p. 46; Lisa Jardine, *Ingenious Pursuits*.

³³ Michael Leslie and Timothy Raylor have suggests these were drafted in 1659. See Michael Leslie and Timothy Raylor, eds., *Culture and Cultivation in Early Modern England: Writing and the Land* (Leicester: Leicester University Press, 1992), p. 226.

³⁴ HP 25/6/1A-4B, Letter, John Beale to [Hartlib], Undated. All further quotations from Beale's proposal are taken from this letter.

to make it the study, as well of Ladyes, as of Scholars. And I have made many Gentlewoemen more exp[er]t in it, than my selfe, as more at leysure'. By proposing to dedicate this book to Lady Ranelagh, Beale was explicitly trying to reach a diverse audience that included gentlewomen. However, his concern that a book on physic gardens might be 'unfit for a Lady' could be read in two ways, suggesting either that gender or social status was an issue.

Beale's intention to make horticulture a subject of study for 'Ladyes, as of Scholars' conflates two distinctly separate audiences in the contemporary print market. There were only a few gardening books printed in English which were explicitly addressed to a female audience, generally aimed at the 'country housewife'. The first of these was William Lawson's *Countrie Housewives Garden* (1617), a short pamphlet that described the upkeep of two types of gardens: 'A garden for flowres [sic], and a kitchin Garden'.³⁵ Gervase Markham's *The English Hus-wife* (1615) also included a short piece on gardening under the section 'Of Cookery', specifically addressing the practical functions of a kitchen garden.³⁶ These books addressed non-urban women of the 'middling sort' and discussed vegetables and herbs only as far as their practical uses in cookery. The subject matter was certainly not one that would interest scholars, and the required physical labour and dirtiness would be improper for a Lady.

Horticultural books intended for scholars were not practical guides, and most focussed instead on more theoretical aspects, including the history of gardening in antiquity, philosophical discussions of arranging nature by artifice, or the Christian

³⁵ William Lawson, *The Countrie Housewives Garden, Containing Rules for Hearbes of common use* (London, 1617), p. 10; Bushnell, *Green Desires*, p. 111.

³⁶ Gervase Markham, *The English Housewife*, ed. by Michael R. Best (Kingston and Montreal: McGill-Queen's University Press, 1986), pp. 60-64.

symbolism of modern gardening.³⁷ There were also those concerned with the observation of plants for medical purposes or empirical collecting and recording, and these included descriptions and realistic drawings of the specimen. The academic study of plants began in early sixteenth-century Italy and quickly spread across Western Europe through a number of botanical books.³⁸ Latin was chosen as a neutral and scholarly language to facilitate the coherent naming of plants, and most scholarly botanic books in the sixteenth and early seventeenth century were printed in this language.³⁹

The only contemporary horticultural book addressed to both ladies and scholars was John Parkinson's book on flower gardens, *Paradisi in Sole* (1629). While written in English and concerning practical aspects of gardening, the text was an explicit departure from the more 'common' books available in the genre. His concern for status is a theme that runs throughout the book: it was printed in folio, dedicated to Henrietta Maria, included discussions on the status of various plants, and was aimed at gentlemen and women. In the dedication to the Queen, he refers to the book having a 'feminine' subject matter because it concerned flowers. However, the instructive text within assumed a genteel audience that was both male and female, suggesting that flower gardening held ambiguously gendered connotations by the mid-seventeenth century. An interest in flowers could be appropriate to aristocratic women maintaining an estate, to professional florists, and to gentlemen enthusiasts alike.⁴⁰ A similar book that was never published, but was drafted around the time of Beale's proposals, was John Evelyn's 'Elysium

³⁷ Andrew Cunningham, 'The Culture of Gardens', in *Cultures of Natural History*, ed. by N. Jardine, J.A. Secord, and E. C. Spary (Cambridge: Cambridge University Press, 1996), pp. 38-56.

³⁸ A. G. Morton, *History of Botanical Science: An Account of the Development of Botany from Ancient Times to the Present Day* (London: Academic Press, 1981), pp. 120-21.

³⁹ Cunningham, 'The Culture of Gardens', pp. 51-52.

⁴⁰ Bushnell, *Green Desires*, pp. 124-26.

Britannicum, or The Royal Garden in Three Books'. Evelyn's book, also written in English, was a synthesis of many scholarly Latin works and practical horticultural guides, further demonstrating how gardening was becoming a subject in which both gentlemen and women could interest themselves.⁴¹

Beale's proposal for 'A Physique Garden' drew from this diverse array of sub-genres and authorities to create a practical guide intended for a wide-ranging audience. His chapters drew on ancient and modern authorities, and theoretical discussions were interspersed with practical gardening applications. For example, three chapters are based on Pliny the Elder's *Naturalis Historiae*, an ancient Roman encyclopaedia of natural knowledge, and another chapter intended to compare 'Ld Bacons judgemt wth Virgills'.⁴² Yet Beale also included chapters on many of the mundane tasks typically found in a more common husbandry manual, such as the 'Choice of soyle proper for severall kinds of plants' and 'Eight or nine rules Concerning dung'. The final chapter is the only one directed explicitly towards gentlewomen: 'An encouragemt to Ladyes & Gentlewomen to assiste us in finding out & dressing this unforbidden fruite, In wch they may have the happines to excell the greatest of ancient philosophers'. This chapter casts elite women as fellow Baconian investigators, placing them in a genealogy of natural philosophers trying to discover God's 'unforbidden fruite'. This is a unique addition to the small market of

⁴¹ For a complete transcription of the manuscript, see John Evelyn, *Elysium Britannicum, or The Royal Gardens*, ed. by John E. Ingram (Philadelphia: University of Pennsylvania Press, 2001). For a discussion of Evelyn's book having been aimed at an elite audience, and for John Beale's reaction to its composition, see Chambers, "'Wild Pastorall Encounter'".

⁴² Chapter 14 was entitled 'From Plinyes judgemt three directions for Indian rarities; And first the Riches of ye soyle; wch may bee helped by ballast of ships; by sea sand; & by stalkes of Indian & forreigne plants putrified'. Chapter 16 was 'Plinyes Second directions, The Temper of the heavens: Our greatest distresse much rayne, The Proper remedies. To double the Sun rayes; Howe to lengthen our Autumne, And to præoccupate our spring: And to interrupt the Vehemence of extreame Winter. Howe to alter & wholly to reverse the force of Winds: And howe to make such choice of Plants as will warme the ayre for others: & howe to prevent blasts'. Chapter 17 was 'Plinyes third accomodation, plenty of wholesome waters. The Concernement of it. What waters hurt. what do good. what are best for the bloome & leafe; what best for the rootes. what remedies in overwet sumers. what remedies in droughts'. See HP 25/6/1B.

women's horticultural books, which were either practical guides for country wives or discussions of flower gardens suitable for gentlewomen. Interestingly, while Beale drafted proposals for both 'A Garden of Pleasure' and 'A Physique Garden', he wanted to dedicate the more 'masculine' text to Lady Ranelagh — not that concerning the more 'feminine' subjects of flowers, perfumes, and aesthetic colour arrangements.

In the light of Beale's amalgamation of various sub-genres, his concern that the subject might not be suitable for 'a Lady' could still be taken in two ways. The ungainly physical labour required by gardening and the inclusion of vulgar subjects such as types of dung suggest that his book could be inappropriate for an elite woman. Yet his decision to ground his practical advice on scholarship on natural history and his frequent use of Baconian language suggest that this book was not intended for a common audience in the same way as a book like Lawson's *Countrie Housewives Garden*. Instead, the book appears to be intended mostly for the gentleman scholar, and it is only the final chapter which suggests that exploring nature could also interest gentlewomen. Therefore, while his comment may have also expressed a concern for social status, it seems most likely that Beale's fear rested in her gender. But why?

The possibility of entering print meant extending ideas appropriate within the Hartlib Circle to the public at large. While Lady Ranelagh was acknowledged as an authority on natural philosophy within the Hartlib Circle, to proclaim her as such in the medium of print could be inappropriate. Though two printed books were dedicated to her within her lifetime — William Robertson's *A Gate or Door to the Holy Tongue* (1653) and Robert Boyle's *Occasional Reflections upon Several Subjects* (1665) — they were both explicitly religious texts. Further, while both dedications celebrate her learning, they

link this explicitly to her piety and modesty. Beale's dedication could have drawn unwanted public attention to this modest woman at the same time as it encouraged other women to involve themselves in branches of natural philosophy not purporting utilitarian domestic functions. Lady Ranelagh could maintain a public profile within the Hartlib Circle as a female natural philosopher, but the possibility of reaching a larger audience called into question the limits of prescribed female knowledge.

Surveying the evidence, it appears that within the Hartlib Circle Lady Ranelagh's gender did not hinder her ability to win and sustain a reputation as a female natural philosopher. Her male correspondents took seriously her opinion and encouraged her to pursue her interests further. The only possible exception is Beale's hesitancy about printing a practical horticultural guide with a dedication to her, which appears indicative of other cultural stigmas, such as print and social status, rather than of any personal doubts about her worth. The Hartlib Circle was an environment in which she could explore various branches of natural philosophy without being limited by her sex.

This forces us to consider whether Lady Ranelagh was an exception due to her superior intellect, or whether the Hartlib Circle was a rare place in which women could participate in intellectual exchanges without gender restrictions. In addition to her, there are some other female members of the circle who contributed to discussions of natural philosophy. Catherine Küffler, daughter of Cornelius Drebbel and wife of Dr Johann Sibertus Küffler, was considered a chymical authority. Hartlib often mentioned her when discussing her husband's inventions, and his references suggest that she shared in her

husband's work.⁴³ Further, in a letter from Sir Cheney Culpeper to Benjamin Worsley, Culpeper thanks him 'for Dr. Kuffler's wife's experiments, especially concerning harty chocks', and the two debated the proportion of salt to sand required in the experiment.⁴⁴ Lady Joan Barrington also corresponded with Hartlib when his plans for the Circle were still in their infancy. The two traded book recommendations, and Hartlib told her, 'any other manuscript of what kinde so ever espetially of Chymical subjects wilbee most welcome at all times, And it may be I shall be able to gratifie yr Ladishipe wth the like informacons and communications wch wilbee worth p[er]usal'.⁴⁵ Reference to another female natural philosopher may be found in Hartlib's 'Ephemerides' of 1655, where he notes, 'Mris Ogleby Maj[or] Morgans Aunt came to us the 3. of Aug giving the first visit. A rare Chymical Gentlewoman she is, and hath some of Ripley's MS'.⁴⁶ Her identity is uncertain, but she might be Katherine Ogilby (née Hudson), who was married to John Ogilby, a publisher and map-maker who split his time between England and Ireland and knew Robert Boyle, Christopher Wren and Robert Hooke during the Restoration.⁴⁷ Hartlib mentions that that she possessed manuscripts of George Ripley, the Renaissance alchemist who wrote about the philosopher's stone and was considered by seventeenth-century chymists to be an authority on the subject.⁴⁸ Hartlib's comment that Mrs Ogilby is a 'rare Chymical Gentlewoman' stresses the high esteem in which he held her, as the

⁴³ For example, in his 'Ephemerides of 1656, Hartlib says, 'Glaub[er] speakes also much in the Comendation of the said *ol[eum] fraxini*. It is made in the forme of Tables and Dr K[üffler's] wife is bringing some along wth them.' See HP 29/5/88A, Ephemerides 1656, Part 3.

⁴⁴ HP 13/217A-220B. Copy Letter, Sir Cheney Culpeper to [Benjamin Worsley?], 9 May 1648. The definition of 'harty chocks' is unclear.

⁴⁵ HP 7/49/1A. Copy Letter, Hartlib to Lady Barrington, 21 Aug. 1640.

⁴⁶ HP 29/5/42B. Ephemerides 1655, Part 3.

⁴⁷ See entry for 'John Ogilby (1600-1676)' in the *ODNB*.

⁴⁸ Larence M. Principe, *The Aspiring Adept: Robert Boyle and his Alchemical Quest* (Princeton: Princeton University Press, 1998); *ODNB* entry for 'George Ripley (d. 1490)'.

seventeenth-century definition of the word means ‘of uncommon excellence or merit’.⁴⁹

A more detailed study of how women participated in the Hartlib Circle as natural philosophers would be needed before any general claim could be made on how gender operated in this network. However, a detailed study of Lady Ranelagh, coupled with a brief overview of a few other women in the Hartlib Circle, suggests that some exceptional women could function as equal partners within these self-selecting circles of the Interregnum.

Apart from the Hartlib Papers, the only additional information about Lady Ranelagh’s interest in natural philosophy during the Civil Wars and Interregnum can be found in the few extant letters she exchanged with her brother Robert Boyle. These letters provide evidence that she encouraged his new interest in the subject, and at no point did either party suggest that her experimentation might be inappropriate for a woman. In 1645, after Boyle’s return from his Grand Tour of the continent and his brief stay at Lady Ranelagh’s, he moved to Stalbridge in Dorset, where he would spend most of the next decade.⁵⁰ It was at Stalbridge that he began exploring chymistry, and some of his earliest letters about it were written to Lady Ranelagh. In the first months of 1647, Lady Ranelagh had been helping her brother to construct a laboratory in his house by assisting him in the shipment of a ‘great earthen furnace’.⁵¹ However, when the furnace arrived broken, after all his careful preparations, Boyle admitted defeat. On 6 March 1647, he wrote to his sister:

Well, I see I am not designed to the finding out the philosophers stone, I have been so unlucky in my first attempts in chemistry. My limbecks,

⁴⁹ Oxford English Dictionary. <www.oed.com> [Accessed 20 December 2009.]

⁵⁰ The Robert Boyle website. <www.bbk.ac.uk/boyle> [Accessed 25 April 2009.]

⁵¹ *Correspondence of Boyle*, I, p. 50. Boyle to Lady Ranelagh, 6 March 1647.

recipients, and other glasses have escaped indeed the misfortune of their incendiary, but are now, through the miscarriage of that grand implement of *Vulcan*, as useless to me, as good parts to salvation without the fire of zeal.⁵²

In his letter, Boyle not only acknowledged his sister's help and encouragement in his project, but used technical vocabulary with a confident assumption that she understood the basics of chymistry.

In addition to encouraging her brother's experimentation with chymistry, from 1645 to 1658, Lady Ranelagh was urging him to compose moral tracts. His letters to her throughout this period constantly referred to the various 'Discourse[s]' on which he was currently working, and the tone he used and his promise to dedicate one of them to her suggests that she played an active part in encouraging their creation.⁵³ As Boyle explained in a letter he wrote to Lady Ranelagh on 13 November 1648, he had not written to her any 'common Letters', because he was busy writing for her 'a Dedicatorie one, which may (possibly) have the Happynesse to convey Your Name to Posterity'.⁵⁴

Boyle's early writings spanned many ethical topics, and at least one of these moral essays, which Lady Ranelagh was encouraging, concerned the moral obligations of natural philosophers. From 1647 to 1649, Boyle was working on a powerful essay against secrecy in natural philosophy — particularly medicine — entitled 'An Epistolical Discourse ... inviting all true lovers of Vertue and Mankind, to free and generous Communication of their Secrets and Receits in Physick'.⁵⁵ The tract was composed in the form of a letter by Philaretus (Boyle) to an anonymous professor of secrets called

⁵² *Correspondence of Boyle*, I, p. 50. Boyle to Lady Ranelagh, 6 March 1647.

⁵³ *Correspondence of Boyle*, I, pp. 79-82. Boyle to Lady Ranelagh, 2 August 1649.

⁵⁴ *Correspondence of Boyle*, I, pp. 75-76. Boyle to Lady Ranelagh, 13 November [1648?].

⁵⁵ John T. Harwood, *The Early Essays and Ethics of Robert Boyle* (Carbondale, IL: Southern Illinois University Press, 1991), p. xx. Also see Michael Hunter, 'The Reluctant Philanthropist: Robert Boyle and the "Communication of Secrets and Receits in Physick"', in *Robert Boyle (1627-91): Scrupulosity and Science*, (Woodbridge: Boydell Press, 2000), pp. 202-22.

Empyricus, wherein the former attempts to convince the latter of the public need for openly communicating valuable secrets. Hartlib published Boyle's epistle in 1655 in the compilation *Chymical, Medicinal, and Chyrurgical Addresses*, but Boyle had begun writing this piece around 1647.⁵⁶ Some evidence of Lady Ranelagh's involvement in the treatise can be found in a letter Robert Boyle wrote to her on 2 August 1649. After relaying details of his illness, Boyle explained:

in the Intervalls of my Fitts I both began & made some Progresse in the promised Discourse of Publicke-Spiritednesse: but now truly Weakenesse & the Doctor's Prescriptions have cast my Pen into the Fire: tho in spite of their Menaces, I sometimes presume to snatch it out a while, & blot some Paper with it.⁵⁷

In this letter, by describing the treatise as 'the *promised* Discourse of Publicke-Spiritednesse', Boyle clearly refers to a discourse about which Lady Ranelagh already knew and which he presumed she was awaiting anxiously. This is the same language he would use sixteen years later when dedicating to her his ethical piece *Occasional Reflections*, in which he called his essays the 'unfinished and unpolished ... Trifles you called for'.⁵⁸ Significantly, Boyle was drafting *Occasional Reflections* from 1646 to 1649, meaning that he was writing these two pieces over the same period of time, and the body of extant letters over these years shows Lady Ranelagh to be the main source of motivation behind the composition of his early works.⁵⁹ By establishing that she encouraged the composition of this work and that Boyle's tone suggests he was speaking with someone familiar with the subject, it would appear that Lady Ranelagh was familiar

⁵⁶ Principe, *Aspiring Adept*, p. 149.

⁵⁷ *Correspondence of Boyle*, I, p. 80.

⁵⁸ Boyle, *Occasional Reflections*, sig. A3v.

⁵⁹ John T. Harwood, *The Early Essays*.

with debates taking place in chymical circles in the mid-1640s, predating the evidence of her interest in chymistry offered in the Hartlib Papers.

In sum, this body of material suggests that Lady Ranelagh was active in a range of natural philosophical activities throughout the Interregnum, and that her opinion was respected by many men who would go on to become leading scientists in the Restoration. Apart from Beale's hesitation over whether a dedication to a woman would be appropriate for a printed horticultural text, there is no suggestion that her opinion was valued less than a man's, or that her gender limited her ability to contribute to developing theories and experiments. Her knowledge of the subject appears far beyond that possessed by most gentlewomen, and she was both a driving force behind Robert Boyle's early chymical experiments and writings, and was recognised as a chymical authority in her own right. Yet while she had been an active member of the Hartlib Circle, she did not become a Fellow of the Royal Society, unlike many of her male friends and associates. That raises the question of how far she was able to continue working with natural philosophy in the Restoration. Was her participation in such activities viewed differently in the new political and cultural climate?

Lady Ranelagh and Restoration Science: 1660-91

Throughout the latter half of the seventeenth century, a period that historians used to call the start of the 'Scientific Revolution' in England, Englishmen and women witnessed an overwhelming change in their perception of the world as developments in many scientific fields began competing with and replacing older models.⁶⁰ The telescope

⁶⁰ Steven Shapin, *The Scientific Revolution* (Chicago: University of Chicago Press, 1998). The introduction to this book offers a succinct overview of the problems with using the term 'Scientific Revolution'.

afforded a new view of the sun and stars which led to the geocentric systems of Ptolemy and Tycho Brahe being replaced by new models of the cosmos. Advances in physics and anatomy challenged Aristotelian understandings of both the microcosm (man) and the macrocosm (the universe), which paved the way for changes as diverse as new medical treatments and Isaac Newton's Universal Law of Gravitation. Chymical experiments and agricultural developments increased people's understanding of the physical world, whereby studies of matter could flourish.

These scientific developments were assisted by a change in how natural philosophy was organised and how new developments were judged and facts were established. Scientific academies were founded across Western Europe, and on 28 November 1660 the first meeting of the Royal Society took place at Gresham College in London. Unlike in the Hartlib Circle, a member had to be elected as a Fellow in order to participate. From the start the Society was socially selective, with few merchants, even fewer tradesmen, and no women elected. Those men who were elected were not necessarily chosen for their interest in or knowledge of natural philosophy; many other reasons, including court connections, might lie behind their nomination.⁶¹

There is no reason why Lady Ranelagh should not have been elected except that she was a woman, the first direct evidence of a gendered limitation to her ability to practise natural philosophy to the fullest possible extent. While no one in the Hartlib Circle had discriminated against her, and many had actively sought her opinion on various subjects, many of those with whom she had corresponded throughout the Interregnum became Fellows of the Royal Society and (apparently) did not propose her

⁶¹ Michael Hunter, *The Royal Society and its Fellows, 1660–1700*, and Michael Hunter, 'Founder Members of the Royal Society' in *ODNB*.

for election. In contrast to the previous two decades, when information about her natural philosophical interests may be easily found in the Hartlib Papers archive, one must therefore search through her scattered extant correspondence to try to determine how far her interest in the subject continued after the Restoration.

From 1660 until her death in 1691, Lady Ranelagh did in fact maintain relationships with many Fellows of the Royal Society. Her two most intimate associates from the Hartlib Circle, Henry Oldenburg and John Beale, were among the first Fellows to be elected in the early 1660s, and they maintained relationships with Lady Ranelagh throughout their lives. Until 1663, when he acquired his own house in Pall Mall, Oldenburg had his post forwarded to Lady Ranelagh's address, and after this they were neighbours.⁶² Though there is little extant correspondence between the two once they had become neighbours, her sad response to the news of his death suggests that they remained intimate. When Oldenburg and Benjamin Worsley (another old friend from the Hartlib Circle) both died around September 1677, Lady Ranelagh wrote to her brother Robert Boyle saying she must 'condole with you the remove of our true honest ingenious friends ... They each of them in their way diligently served their generation & were friends to us. they have left noe blot upon their memorys'.⁶³ She also maintained a correspondence with John Beale after the Restoration which broached various intellectual and theological subjects. One striking reference to their correspondence may be found in a letter that Beale wrote to Boyle in November 1671, in which he says, 'But I feare I have

⁶² For a late example, see the address of Letter, Robert Southwell to Oldenburg, 17 June 1663, in *Correspondence of Oldenburg*, II, pp. 72-74. Also see Marie Boas Hall, *Henry Oldenburg: Shaping the Royal Society* (Oxford: Oxford University Press, 2002), pp. 69 & 83.

⁶³ Letter, Lady Ranelagh to Boyle, 11 September [1677] in *Correspondence of Boyle*, IV, pp. 454-55. Lady Ranelagh was probably staying with her sister Mary Rich, Countess of Warwick, when she wrote this letter to 'my Brother at London'. The signature of this letter says 'The Countess & our Youths are your servants'.

tyred my Lady ViC[ountess] R[anelagh] with many other wilde matters, & with a touch upon this laste point of Philos: Concerning Spiders, Caterpillars, Aereal Cobwibs. Beseeching your favour to present my most humble service to her I may for shame make hast to subscribe'.⁶⁴ This quotation comes after a lengthy passage about 'the Authentic narrative of the Genesis, or creation', in which Beale discusses the anatomy of insects and rocks in relation to both the Book of Genesis and Thomas Muffet's *Insectorum sive minimorum animalium theatrum* (1634). This passage indicates that even after the Restoration Beale had conversations with Lady Ranelagh that were of a similar subject matter as those he had with Robert Boyle. It also shows that the two continued their philosophical discussions which drew on both scientific and biblical authorities, suggesting there was little change in the nature of their relationship before or after the Restoration. Though few letters between Beale and Lady Ranelagh are extant post-1660, he makes frequent reference to writing to her in his letters to Boyle, and as late as 1682 he spoke of her as his 'great & Constant Friend'.⁶⁵

In addition to these friendships that had begun during her active years in the Hartlib Circle, Lady Ranelagh also gained the respect of several Fellows of the Royal Society with whom she appears to have had no prior history. The Scottish politician and Founder Member of the Society, Sir Robert Moray, speaks of being in 'my lady Ranelagh's presence' in 1661.⁶⁶ Robert Hooke, who succeeded Henry Oldenburg to become the second Secretary of the Royal Society in 1677, visited her many times

⁶⁴ Letter, John Beale to Boyle, 27 November 1671, in *Correspondence of Boyle*, IV, pp. 225-28.

⁶⁵ Letter, John Beale to Boyle, 26 [June] 1682, in *Correspondence of Boyle*, V, pp. 298-304 (p. 303).

⁶⁶ *Correspondence of Boyle*, I, pp. 462-63. Letter, Sir Robert Moray to Robert Boyle, 7 October 1661.

throughout the 1670s and stayed in her house on his extended visits to London.⁶⁷ Daniel Coxe, elected Fellow of the Royal Society in 1665, mentions that the first time he saw the ‘Irish stroker’ Valentine Greatrakes, it was when he was visiting Lady Ranelagh, and in a later letter to Boyle he refers to her as ‘the beloved Sophronia’.⁶⁸ Further, while there is no direct proof that Fellows visited Lady Ranelagh, some of them made reference to her in letters to Boyle or Oldenburg, suggesting they had previously met. For example, in a letter from Thomas Coxe to Boyle written in 1670, he asked to be remembered to Lady Ranelagh, evidencing that he knew her.⁶⁹ In 1674 Francis Mercury van Helmont closed a letter to Oldenburg by telling him that he would like Oldenburg to ‘pay [his] respects to Mr. Boyle and Madam Ranelagh’, suggesting that van Helmont had previously met her and knew that Oldenburg was still in frequent contact with both siblings.⁷⁰

After the Restoration, Lady Ranelagh also remained active in encouraging her brother Robert Boyle to pursue his interest in natural philosophy. Boyle moved from Stalbridge to Oxford around 1656 and remained there until 1668. Throughout this time, he exchanged frequent letters with his sister, and she continued to encourage him to write

⁶⁷ Lisa Jardine, *The Curious Life of Robert Hooke: The Man who Measured London* (London: Harper Perennial, 2003) pp. 87 & 91. Also see the many references to Lady Ranelagh throughout *The Diary of Robert Hooke 1672-1680*, ed. by Henry W. Robinson and Walter Adams (London: Wykeham, 1968).

⁶⁸ Letter, Daniel Coxe to Boyle, 5 March 1666, in *Correspondence of Boyle*, III, pp. 82-90 and Letter, Daniel Coxe to Boyle, [c. August 1666], in *Correspondence of Boyle*, III, pp. 211-17. ‘Sophronia’ was the sobriquet Boyle used for Lady Ranelagh when dedicating to her his *Occasional Reflections* (1665). For Boyle’s witnessing of Greatrakes at Lady Ranelagh’s, see BL Add. MS 4293, fols. 50-51, *Workdiary* 26, Quoted from <www.livesandletters.ac.uk> [Accessed 25 May 2009]. Valentine Greatrakes (1629-83) was an Irish healer who visited England in 1666 and performed his cure by ‘stroking’. For more on him, see Nicholas Steneck, ‘Greatrakes the Stroker: The Interpretations of Historians’, *Isis*, 73 (1982), 160-77; Barbara Beigun Kaplan, ‘Greatrakes the Stroker: The Interpretations of his Contemporaries’, *Isis*, 73 (1982), 178-85; Maddison, *Life of the Honourable Robert Boyle*, pp. 123-26.

⁶⁹ Letter, Thomas Coxe to Boyle, 23 April/2 May 1670, in *Correspondence of Boyle*, IV, pp. 172-74.

⁷⁰ Letter, van Helmont to Oldenburg, 20 June, 1674, in *Correspondence of Oldenburg*, XI, pp. 39-41. This lends further evidence to Sarah Hutton’s claim that Lady Ranelagh and Lady Anne Conway may have known each other, as van Helmont was living with Anne Conway at the time he wrote this letter. Francis Mercury van Helmont (1614-1699), the Flemish physician and philosopher, was the son of the iatrochemist Jan Baptiste van Helmont. See Sarah Hutton, *Anne Conway: A Woman Philosopher* (Cambridge: Cambridge University Press, 2004), pp. 138-39.

more treatises. While it is well known that she was an inspiration behind his early moral essays and the publication of his *Occasional Reflections* (1665), it is less known that she also encouraged some of his early works on natural philosophy. In a letter to her brother in 1665, Lady Ranelagh wrote:

I Could not therefore endure to mention, en passant, My satisfaction In heareing you had neere finished your treatise of, Substantial Formes, which will yet soe much further Explication your notice, of figures & texture as to help the considering part of mankind, to a cleerer prosepct into this greate frame of the visibile world, & therein of the power & wisdom of its great maker, than the rough draughts wherein it has heatherto been represented In the Ignorant & whole sale philosophie, that has soe long, by the power of an Implicite faith in the Doctrine of Aristotle & the Schooles, gonn currant in the world, has ever binn able to assist them towards,⁷¹

She refers here to Boyle's *The Origin of Forms and Qualities*, which would be printed the following year. This treatise attacked the predominant contemporary scholarship, and Michael Hunter has summarised its importance by explaining that Boyle was 'trying to wean his contemporaries away from the essentially qualitative modes of thinking associated with Aristotelian ideas, and to indicate the superior intelligibility of mechanical explanations of phenomena'.⁷² Lady Ranelagh's detailed response shows that she was familiar with the traditional Aristotelian philosophy and that she saw how Boyle's treatise would advance and transform contemporary scholarship. It is a well-informed endorsement of his work. Her sentiment uses the same enthusiastic and knowledgeable tone as when she was encouraging Boyle to write his theological discourses.

In 1666, when Boyle began discussing the possibility of moving to London, Lady Ranelagh encouraged him to move in with her. In a letter to her brother written in

⁷¹ Letter, Lady Ranelagh to Robert Boyle, 29 July 1665, in *Correspondence of Boyle*, II, pp. 498-500.

⁷² Quoted from his entry for 'Robert Boyle (1627-91)' in *ODNB*.

November 1666, she agreed to ‘put my back-house in posture to be employed by you’.⁷³ When he finally agreed and left Oxford to move into her Pall Mall home in 1668, she followed through with her promise and had private quarters and a laboratory built in the back of the house for his use.⁷⁴ Once the siblings were living together, there is inevitably little direct evidence of their continuing scientific relationship. They no longer needed to maintain a written correspondence, and Boyle’s work diaries rarely mention assistants or amanuenses by name. Yet the many references to Lady Ranelagh in the letters of his associates suggest that they met with his sister when they visited his laboratories, demonstrating that she at least continued to serve as a hostess for his philosophical meetings. For example, when the siblings dined together, she must have enjoyed frequent informal interaction with Boyle’s scientific friends. Robert Hooke made numerous references to such occasions in his diary, and there were certainly more of Boyle’s associates with whom she would have dined.⁷⁵

While these sources suggest that Lady Ranelagh remained in contact with many of the leading natural philosophers of the Restoration, there is less suggestion of her actual scientific experimentation. Similarly, while there are some extant holograph letters preserved in the Hartlib Papers which discuss natural philosophical matters, there are none extant after 1660. This may suggest either that she did not continue pursuing natural philosophy after the dissolution of the Hartlib Circle, or that the extant letters produce an unreliable, skewed picture of Lady Ranelagh’s activities after the Restoration. To lend

⁷³ Letter, Lady Ranelagh to Robert Boyle, 13 November 1666 in *Correspondence of Boyle*, III, pp. 268-70.

⁷⁴ See entry for ‘Robert Boyle (1627-91)’ in *ODNB*.

⁷⁵ On 25 November 1674, Hooke notes, ‘At Mr. Boyles, Dind with Lady Ranalaugh, Lady Slane, Lady Inchiquin’. On 2 October 1675, he says, ‘Dind with Mr. Boyle and Lady Ranelagh’. On 23 January 1678, he says, ‘At Mr. Boyles, spoke with him and Lady Ranalaugh about bookes’. See *The Diary of Robert Hooke 1672-1680*, ed. by Henry W. Robinson and Walter Adams (London: Wykeham, 1968), pp. 132, 184, & 341.

support to the latter view, it must be stressed that Lady Ranelagh's extant letters are only found in the files preserved by her friends and family members. It may be simply that more information about her scientific knowledge and experimentation was preserved during the Civil Wars and Interregnum because of Hartlib's meticulous filing system. Further, the majority of her extant Restoration letters are those written to her brother the Earl of Cork and Burlington, and these were primarily personal and political in nature because he would not have been one with whom she would have discussed matters of natural philosophy. Within a few years after the Restoration, the men with whom she most frequently discussed such matters — Robert Boyle and Henry Oldenburg — lived in such close proximity that a written exchange was no longer necessary. The identity of the recipients of her extant letters must therefore be considered along with the subject-matter within them, and the lack of intellectual discussions may well be the result of her shaping the content to her audience rather than a reflection of her changing attitudes.

Nonetheless, when we compare the wealth of evidence of her natural philosophical knowledge and practice during the Civil Wars and Interregnum with the sparse evidence after the Restoration, Lady Ranelagh appears to fit Londa Schiebinger's model for the exclusion of women from scientific activity after the founding of male-only institutions. While she maintained a relationship with many Fellows of the Royal Society, there are far fewer references to them treating her as an authority figure than may be found during her association with the Hartlib Circle. For example, while the Hartlib Papers provide evidence of Lady Ranelagh's wide range of natural philosophical interests, the majority of references to her by contemporaries during the Restoration are polite remembrances. Even if there are very few extant letters by her on natural philosophy after

the Restoration, one might have expected more references in the letters and diaries of her contemporaries to her interest in it if her experimentation had continued. The next section analyses this transition in more depth, and asks whether Schiebinger's model is the most appropriate explanation for this change, or if we may find other clues from Lady Ranelagh's biography.

The Case-Study of Lady Ranelagh: Gender and Science in Seventeenth-Century England

If we consider the extant manuscripts to be a reliable map of Lady Ranelagh's interest in and practice of natural philosophy, it appears that she was active during the 1640s and 1650s, but much less so after the Restoration. The nature of her participation also appears to have matched the changing contemporary intellectual climate. For instance, while Lady Ranelagh was encouraged by contemporaries to write a transmutation history of Dr Butler that was copied and circulated within an international coterie during her years in the Hartlib Circle, she became more of a background figure in the Restoration, writing letters to encourage Robert Boyle to print his works but not writing any natural philosophical discourses of her own.

The most tempting and obvious conclusion is to argue that Lady Ranelagh's withdrawal from natural philosophy in the Restoration corroborates arguments about women's exclusion from the subject after the foundation of male-only institutions. Most of the 'big picture' histories of science and gender in the seventeenth century point to large-scale evidence of this transition.⁷⁶ However, while a survey of Lady Ranelagh's

⁷⁶ Ludmilla Jordanova, 'Gender and the Historiography of Science', *British Journal for the History of Science*, 26 (1993), 469-83.

extant manuscripts fits the dating presented by these models, such theories consider only one aspect of these women's lives, producing a skewed portrait in which the early modern female subject becomes victim. For example, when Hilary Rose questions the exclusion of women like Lady Ranelagh after the Restoration, she attributes this to Robert Boyle's 'Janus-like behaviour': 'What went on in the minds of these men so that the wife or the sister was at one moment their intellectual confidante and at the next, the Other, to be excluded from the new public knowledge?''⁷⁷ But Lady Ranelagh's authoritative self-presentation in her extant letters both before and after the Restoration reveals that such a statement certainly does not capture Lady Ranelagh's spirited and commanding personality. Yet Stephen Shapin offers another extreme, showing how mainstream histories of science still do not engage with questions of gender. According to Shapin, 'Lady Ranelagh's invisibility in experimental natural philosophy therefore stems substantially from her apparent lack of interest in the details of what was going on in her brother's laboratory at the back of her house and in the particular knowledge-claims which flowed out of it'.⁷⁸ This conservative analysis exposes Shapin's limited understanding of gender and early modern natural philosophy, as well as his lack of research on Lady Ranelagh more specifically. By reading Lady Ranelagh's transition in natural philosophy against the larger body of her extant letters, a more nuanced approach to the question of gender and science in the seventeenth century may be presented — one that is both less reactionary than Rose's and more informed than Shapin's.

Lady Ranelagh's religious activities are essential to understanding her practice of and changed attitudes toward natural philosophy. As Gilbert Burnet said of her in his

⁷⁷ Hilary Rose, 'Foreword: From Household to Public Knowledge, to a New Production System of Knowledge', in *Women, Science and Medicine*, pp. xi-xx (p. xiv).

⁷⁸ Steven Shapin, *A Social History of Truth* (Chicago: University of Chicago Press, 1994), p. 372.

eulogy for Robert Boyle, 'she had the deepest Sense of Religion, and the most constant turning of her Thoughts and Discourses that way'.⁷⁹ Above all else, if Lady Ranelagh was to be remembered for one thing, it would be for her piety. From her earliest letters in the Hartlib Papers to her preoccupation with producing an Irish translation of the Bible in 1682, Lady Ranelagh's zealous Protestantism was the driving force behind all her activities. Throughout her letters, she fashioned herself as a woman of exemplary piety, and it is this reputation that both gained her the respect of educated male contemporaries and shaped her involvement in and writings about natural philosophy.

Lady Ranelagh's dedication to religion makes it unsurprising that the intellectual group in which she was most active was the Hartlib Circle. According to the 'pact' signed in 1642 by Hartlib, Dury and Comenius, their society promised to dedicate itself 'to the glory of God and the utility of the public'.⁸⁰ From the start, this utopian circle married its scientific agenda with religious zeal, transforming the upheaval of the Civil Wars into an opportunity to realise radical socio-religious changes in England. Lady Ranelagh appears to have been first introduced to the Circle through John Dury and Dorothy Moore, and the earliest references to her in the archive are the letters that the two wrote to her when Moore was debating whether she could better serve God by marrying Dury or remaining single.⁸¹ The majority of references to Lady Ranelagh in the Hartlib Papers which date from the early- and mid-1640s present her as a religious authority, such as a letter John

⁷⁹ Gilbert Burnet, *A Sermon Preached at the Funeral of the Honorable Robert Boyle* (London, 1692), p. 34.

⁸⁰ This is taken from the 'pact' signed by Hartlib, Dury and Comenius on 3 March 1642. Quoted in Mark Greengrass, 'Archive Refractions: Hartlib's Papers and the Workings of an Intelligencer', in *Archives of the Scientific Revolution: The Formation and Exchange of Ideas in Seventeenth-Century Europe*, ed. by Michael Hunter (Woodbridge: Boydell Press, 1998), pp. 35-48 (p. 36).

⁸¹ These letters have all been reproduced in *The Letters of Dorothy Moore, 1612-64: The Friendships, Marriage, and Intellectual Life of a Seventeenth-Century Woman*, ed. by Lynette Hunter (Aldershot: Ashgate, 2004).

Dury wrote to Hartlib referring to the ‘discourse on faith’ he was writing to her.⁸² It was not until 1648 that her name became increasingly attached to medical topics, and not until the mid- to late-1650s that she appears to have become more interested in the experimental natural philosophy that was discussed in the first section of this chapter. This evolution of her intellectual interests, as revealed by the roughly 200 references to her name in the Hartlib Papers archive, suggests that Lady Ranelagh was probably initially attracted to the Hartlib Circle because of their professed religious sentiment, but that her interests expanded over the course of the two decades as she corresponded and met with many of the leading figures in natural philosophy. Because Lady Ranelagh had such a secure reputation as a pious woman, her transition into natural philosophy was accepted and encouraged by her male correspondents.

As a pious gentlewoman, Lady Ranelagh obeyed the contemporary social dictates for a woman of her social status and religious affiliation. In relation to her literary output, this meant that she would not have considered print publication, as the medium was both socially below her and inappropriate to a woman.⁸³ Yet during her years as a member of the Hartlib Circle, her works were published by way of scribal publication, and she maintained a public profile within her diverse international community as an authority on various aspects of natural philosophy. In addition to writing letters, she also exchanged chymical recipes with virtuosi, another form of literary exchange and production appropriate to a gentlewoman. These years with the Circle show her exploiting literary

⁸² Letter, John Dury to Hartlib, 8 September 1646, HP 3/3/34A-B.

⁸³ Margaret Ezell, *The Patriarch's Wife: Literary Evidence and the History of the Family* (Chapel Hill: University of North Carolina Press, 1987), esp. Ch. 3; Wendy Wall, *The Imprint of Gender: Authorship and Publication in the English Renaissance* (Ithaca: Cornell University Press, 1993); Arthur F. Marotti, *Manuscript, Print, and the English Renaissance Lyric* (Ithaca: Cornell University Press, 1995). Aside from Margaret Cavendish, who made no apology for wanting fame, gentlewomen would have preferred to publish their natural philosophical ideas in manuscript.

conventions to her advantage, simultaneously maintaining a pious and authoritative reputation.

After the Restoration, the utopian dreams of the Interregnum faded away. The reformers were unable to regain their influence after Oliver Cromwell's death, and once Charles II reclaimed the throne many of them lost their previous governmental patronage or were pursued as threats to the monarchy. Those involved in intelligence networks, such as the Hartlib Circle, were offered two choices: they could either seek election as a Fellow of the Royal Society, or direct their energies elsewhere, and work on natural philosophy in a far more limited capacity outside the Society. Though the initial aims of the Royal Society sounded similar to those of the Hartlib Circle, some members of the Circle never showed an interest in joining the new institution, and others, such as Hartlib himself, were excluded because of their outdated or unfashionable views on natural philosophy.⁸⁴ As Mark Greengrass has shown, the Restoration 'reasserted gentry civilities as the means by which knowledge should be circulated and truth validated. Hartlib was readily parodied as a fanatic and a "projector", someone seeking to make a quick fortune at the public expense'.⁸⁵ Another example is John Dury, who lost his librarianship under Charles II and filed many petitions for funding that went unanswered; he left England early in 1661 and lived abroad for the rest of his life, continuing to write religious discourses from the continent.⁸⁶ Charles Webster explains that after the Restoration, Benjamin Worsley 'was inhibited from his more radical schemes for social and religious

⁸⁴ For more information about how the Royal Society tried to distance its practice of natural philosophy from the zealous religious ambitions of the previous decade, see William Eamon, *Science and the Secrets of Nature: Books of Secrets in Medieval and Early Modern Culture* (Princeton, NJ: Princeton University Press, 1994), esp. Ch. 10.

⁸⁵ 'Samuel Hartlib (c.1600-1662)' entry in *ODNB*.

⁸⁶ 'John Dury (1596-1680)' entry in *ODNB*.

reform'.⁸⁷ While Worsley never joined the Royal Society or the Royal College of Physicians, he continued to pursue agricultural projects and began describing himself as an MD.⁸⁸

These active members of the Hartlib Circle were not elected to the Royal Society, or showed no interest in being elected, because their personal interest in natural philosophy was 'of a time' — triggered by the utopian and millenarian optimism of the 1640s and 50s but not independently strong enough to be maintained in the more sober and restrictive Restoration climate. Hartlib, Dury, and Worsley were radicals whose interest in natural philosophy was intrinsically linked with their plans for socio-religious reform, and their ideas would not have matched those of the Royal Society. Lady Ranelagh is another example of this type, and it is not surprising that in the Restoration she maintained a relationship with these three religious radicals from her visionary days in the Interregnum. When Hartlib was ill and impoverished in 1661, Lady Ranelagh tried to secure for him financial assistance from the crown, though he died shortly after, in March 1662.⁸⁹ As mentioned earlier, she wrote to Robert Boyle regarding Oldenburg's and Worsley's deaths in quick succession around September 1677, calling them 'our true honest & ingenious friends', demonstrating that she had maintained an intimate relationship with Worsley throughout the Restoration years. When Dury was ill in 1678 and contemplating his approaching demise, he wrote to John Pell describing the various responsibilities he had entrusted to his friends.⁹⁰ Dury explained, 'I have let the Lady

⁸⁷ 'Benjamin Worsley (1617/18-1677)' entry in *ODNB*.

⁸⁸ Charles Webster, 'Benjamin Worsley: Engineering for Universal Reform' in *Samuel Hartlib & Universal Reformation*, pp. 213-235.

⁸⁹ HP 4/4/37A-B. Letter, Dorothy Moore to Hartlib, 13 October [1661].

⁹⁰ John Pell (1611-85) was a mathematician who was involved in the Hartlib Circle and who, after the Restoration, was ordained a priest. He was elected to the Royal Society in 1663 and published several books on mathematics after the Restoration.

Ranelagh Dowager know the state of my Religious negotiation, & in what a posture I desir to stand for the further prosecution thereof'.⁹¹ This suggests that he and Lady Ranelagh had continued a religious correspondence throughout the Restoration period, and that two years before his death he knew that she was the most reliable person with whom to entrust his agenda for religious reform. Like these men, Lady Ranelagh's interest in natural philosophy was intrinsically linked to her religious agenda, and Restoration England was no place for such utopian aspirations. Instead of joining the Royal Society, these reformers allowed their religious beliefs to shape new projects for social reform that were more appropriate to the Restoration. Natural philosophy was no longer a subject that promised radical social changes.

After 1660, instead of further pursuing natural philosophy, Lady Ranelagh's religious ambitions fuelled her work in political negotiations and medical practice. She dedicated herself to new projects for socio-religious reform that she believed were needed in the new circumstances, such as promoting toleration for nonconformists and printing the Bible in the Irish vernacular. Around 1667, Benjamin Denham mentioned in a letter to Robert Boyle that:

I have some times visited, that truly Pi[ous La]dy, your Sister Rannelo, and have received from her mouth, more Religious discourses in one halfe houre, then I have done from some Bishops table in ten; The more is the pitty; And she hath <cleerely> made mee of her mind, That Relaxing Somewhat of the Penal lawes to Some sober non Conformists, would not drive but bring them to Church, and at last to a sober Condescention;⁹²

This striking letter shows that Lady Ranelagh not only promoted the toleration of nonconformists, but that she felt moderation in the Church could lead to nonconformists

⁹¹ BL Add. MS 4365, fol. 7. Letter, John Dury to John Pell, 28 May/7 June 1678.

⁹² Letter, Benjamin Denham to Boyle, [before the end of August 1667?] in *Correspondence of Boyle*, III, pp. 326-28 (p. 327). Benjamin Denham (1618-70) graduated from Christ's College, Cambridge, and became chaplain to the Levant Company. See *Correspondence of Boyle*, III, p. 314, note e.

eventually rejoining it, thereby creating a unified Protestant church. As this letter shows, Lady Ranelagh coupled her intellect with her piety to negotiate changes in the law that would help religious nonconformists. Further, it demonstrates that she had not left behind the irenicism pertinent to many projects of the Hartlib Circle, including those founded by her intimate associates Dury and Hartlib.

The Restoration became a time when Lady Ranelagh used her piety and intellect to promote a more tolerant religious environment, and her sympathies extended as far as Baptists. In 1664, she wrote to the Earl of Clarendon to secure a pardon for a dozen General Baptists who had received ‘a sentence of death and confiscation ... for but the suspicion of their having met at a Conventicle’.⁹³ Lady Ranelagh said that she heard this ‘sad story’ from William Kiffin, one of the most influential Baptist figures in England until the 1690s. Once Kiffin alerted her to this injustice, Lady Ranelagh exploited her most powerful political contacts to lobby on behalf of the imprisoned nonconformists — and with successful results. As mentioned in Chapter 1, her manuscript treatise ‘Discourse concerning the Plague’ was written in 1666, offering further support that she advocated on behalf of nonconformists. As in her letter to Lord Clarendon written two years earlier, in the treatise she argued on behalf of nonconformists, who she said were imprisoned in unsanitary, overcrowded jails during an outbreak of the plague when their only crime was praying.⁹⁴ As these political and literary activities suggest, Lady Ranelagh continued to intervene on contentious political issues after the Restoration by

⁹³ Uncatalogued Letter, Lady Ranelagh to the Earl of Clarendon, undated. Yale University, Cushing/Whitney Medical History Library. Quoted in Carol Pal, ‘Republic of Women’, II, p. 466. While the letter is undated, the *ODNB* entry for ‘William Kiffin (1616-1701)’ mentions that he was able to rescue twelve General Baptists in the year 1664. Prior to relaying her story to Clarendon, Lady Ranelagh explains her source: ‘Mr. Kiffin has been with me and told me a sad story’. Kiffin was a Particular Baptist minister who published several controversial religious texts after the Restoration.

⁹⁴ Royal Society Library, RB/1/14/4. Also see Ruth Connolly, ‘A Manuscript Treatise by Viscountess Ranelagh (1614-1691)’, *Notes and Queries*, 53 (2006), 170-72.

exploiting her personal connections and writing persuasive letters and treatises that would help those in need. These examples show that the Restoration did not suppress the vivacity of her ambitions; instead she replaced her interest in natural philosophy with a devotion to other subjects she now deemed more important to socio-religious change.

References to Lady Ranelagh's piety only increase in the letters of her associates written after the Restoration. Many of Boyle's religious correspondents throughout the Restoration ask to be remembered to 'your excellent sister My Lady Rannelaugh', evidencing that she maintained relationships with many different religious authorities.⁹⁵ These correspondents include several important figures of remarkably diverse religious affiliations. James Kirkwood and Andrew Sall were involved in her and Boyle's scheme to produce a Gaelic translation of the Bible, and they asked to be remembered to her when writing to Boyle.⁹⁶ The Anglican clergymen Peter du Moulin and Robert Sharrock also commented on Lady Ranelagh's piety.⁹⁷ She even maintained a relationship with the eminent nonconformist Richard Baxter until at least 1682, and she appears to have illegally attended the conventicles he held in 1676.⁹⁸ When considering her relationships

⁹⁵ Letter, James Kirkwood to Boyle, 27 December 1687, in *Correspondence of Boyle*, VI, pp. 242-44.

⁹⁶ James Kirkwood (c.1650-c.1709) is best remembered for his involvement in advocating parish libraries in Scotland and was involved in Boyle's and Lady Ranelagh's scheme to produce a Gaelic translation of the Bible. See Letter, James Kirkwood to Boyle, 27 December 1687, in *Correspondence of Boyle*, VI, pp. 242-44. Andrew Sall was a Jesuit who publicly converted to Anglicanism in 1674. He then went to Oxford University in 1675, from which he received his doctorate in divinity. See Letter, Andrew Sall to Robert Boyle, 26 October 1680, in *Correspondence of Boyle*, V, pp. 219-221. See entry for 'Andrew Sall (c. 1620-1682)' in the *ODNB*.

⁹⁷ Peter du Moulin (1601-84) was an Anglican clergyman who published several controversial religious texts. See Letter, Peter du Moulin to Boyle, 1 October 1673 and Letter, Du Moulin to Boyle, 23 February 1674, in *Correspondence of Boyle*, IV, pp. 361-62 & 381-83. Robert Sharrock (1630-84) was an Anglican clergyman and author who oversaw the publication of Boyle's works in the early 1660s. See Letter, Robert Sharrock to Boyle, 13 July 1664, in *Correspondence of Boyle*, II, pp. 293-94.

⁹⁸ During the Restoration, Richard Baxter (1615-91) promoted liberty of conscience. See Letter, Richard Baxter to Robert Boyle, 29 August 1682, in *Correspondence of Boyle*, V, pp. 323-33. In this letter, Baxter thanks Lady Ranelagh for her kindness, showing that the two were still communicating as late as 1682. She is also listed as one of Baxter's 'Lady Auditors' in a list of those attending illegal conventicles in 1676. See BL Egerton MS 3330, fol. 6. Quoted in Ruth Connolly, 'A Manuscript Treatise', p. 171.

with these men along with her friendship with Kiffin, the range of her contacts is striking, serving to reinforce that she hoped to reconcile the various factions of Protestantism.

The only branch of natural philosophy that is consistently present in Lady Ranelagh's Restoration letters is medicine. From at least 1648 (the earliest dated reference to her interest in the subject) until the final years of her life, Lady Ranelagh maintained a diverse medical network and her letters to these correspondents exhibit a woman who is authoritative and knowledgeable about the latest medical developments. As will be discussed in Chapter 5, Lady Ranelagh experimented with both herbal and chymical medicine, and her commanding personality surfaces in these letters as she disagrees with leading male physicians and critiques the ethics of their medical practice. These letters do not suggest a female victim unable to continue practising chymistry and optics and turning to medicine as a last resort. Instead, they show a confident, intelligent woman who commanded the respect of elite physicians of her day and was not afraid to confront those with whom she disagreed.

Lady Ranelagh's turn from abstract natural philosophy in the Interregnum to practical medicine after the Restoration makes sense when considering both the larger intellectual culture in these times, and how natural philosophy related to her personal religious agenda. As Charles Webster has explained, the reformation of natural philosophy during the 1640s and 1650s was intimately linked to the larger socio-religious climate in England.⁹⁹ During the time, Lady Ranelagh shared with others in the Hartlib Circle a belief in the potential of advancing and organising knowledge by implementing Baconian practices. She promoted the open communication of all useful knowledge and

⁹⁹ Charles Webster, *The Great Instauration: Science, Medicine and Reform 1626-1660* (London: Duckworth, 1975).

maintained intellectual correspondences that wove discussions of natural philosophy with religion. In the Interregnum, the belief behind advancing knowledge was to reveal God's secrets and to organise and distribute all useful information to the public. However, after the Restoration, natural philosophy became more of a gentlemanly pastime than a means to instil God's new kingdom on earth. As mentioned in Chapter 1, her opinion of the moral state of the monarchy and court life became increasingly critical by the mid-1660s, and she chose to focus her attention on charitable activities that would improve society. Throughout the Restoration, medicine was a branch of natural philosophy that gentlewomen could explore, and the charitable aspect and intellectual rigour it required would have fitted well with Lady Ranelagh's larger interests.

Yet of course Lady Ranelagh's outdated radical views were compounded by her gender. While many members of the Hartlib Circle may have been excluded from the Royal Society because their socio-religious views now appeared fanatical or threatening, Lady Ranelagh would have been further excluded because she was a woman. While Benjamin Worsley could continue pursuing natural philosophical projects after the Restoration regardless of lacking a Fellowship in the Royal Society, the Restoration offered pious women like Lady Ranelagh far fewer avenues for practising the subject. She could make and distribute medicines, or she could remain in the background of her brother's experiments, and she made use of both these options. However, instead of viewing this transition as a forced exclusion from natural philosophy, it is important to attribute agency to a woman as determined and commanding as Lady Ranelagh. She was still trying to bring about the Kingdom of God, but in a different way to suit a very different environment. If she had been less dedicated to charity and piety, she might have

continued publicly fashioning herself as a woman natural philosopher. However, as a socio-religious radical who viewed her responsibility to God above all else, it was natural that during the Restoration she should turn her energies toward religion, medicine, and discreet political lobbying — subjects which could be explored and applied with immediate charitable results.

Lady Ranelagh's opinion on gender and natural philosophy after the Restoration may be partly gauged through her critique of the only Englishwoman to try maintaining a public profile as a female natural philosopher: Margaret Cavendish, Duchess of Newcastle. In addition to printing many books on various natural philosophic subjects, on 30 May 1667 Cavendish gained admittance to the Royal Society to see a demonstration of Boyle's air pump, thereby making her the first woman to witness an experiment in the Royal Society. Lady Ranelagh was critical of the event, and on 16 April 1667, she wrote to her brother Richard, the Earl of Burlington:

I assure yu ye Dutchess of Newcastle is more discoursed of yn ye treatie
& by al ye Characters I heare giuen her I am resolved she scapes Bedlam
onely by being too rich to be sent theather but she is madd enough to conway
ye title to ye place of her Residence. whose boldness & profanes is allowed
to pass for wit because soe many others can put in noe other claymes to yt
quality yn those very same'.¹⁰⁰

Margaret Cavendish's opulence and complete disregard for modesty, religion, and social conventions made her unacceptable to Lady Ranelagh. Her sentiment matches that of Mary Evelyn, John Evelyn's wife, who said 'I was surprised to find so much extravagancy and vanity in any person not confined within four walls ... Never did I see a woman so full of herself, so amazingly vain and ambitious'.¹⁰¹ Margaret Cavendish's

¹⁰⁰ Letter, Lady Ranelagh to the Earl of Burlington, 13 April 1667. BL Add. MS 75354, fols. 57r-58v.

¹⁰¹ Quoted in Frances Harris, 'Living in the Neighbourhood', pp. 198-99. The letter-writer Dorothy Osbourne was equally disgusted by Cavendish's printed works, stating in a letter to William Temple 'there

visit, and the ill reception it found within the female intellectual community, is another topic which feminist historians have discussed. Some have questioned why Mary Evelyn was so critical of Cavendish when her husband John celebrated the event.¹⁰² Yet such questions assume a gender consciousness that was not present in seventeenth-century England. To women like Mary Evelyn and Lady Ranelagh, piety and modesty were the most important virtues a woman could cultivate. Feminist ideology as we understand it, in which women identified with and united behind a collective womanhood that they all shared, was not yet present in the seventeenth century. Instead, immodesty in a woman was a mark of lost virtue — something from which pious women would want to disassociate themselves, rather than organise behind.¹⁰³

Ultimately, the reasons for Lady Ranelagh's lack of participation in natural philosophy after the Restoration were the result of both changed social and cultural perceptions of natural philosophy (both generally and in specific relation to gender), and her own personal choice to dedicate herself more to religion and medicine. Her interest in and practice of natural philosophy were informed by her duty to serve God and her personal understanding of how to live a pious life. While this may have been partly the result of greater gender restrictions on women practising natural philosophy during the Restoration, it is important to reinsert some element of agency into larger models of feminist history of science. If we attempt to see the world through the eyes of these women instead of holding them up to anachronistic feminist standards, we may better

are many soberer People in Bedlam'. Quoted in Helen Wilcox, 'Feminist Criticism in the Renaissance and Seventeenth Century', in *A History of Feminist Literary Criticism*, ed. by Gill Plain and Susan Sellers (Cambridge: Cambridge University Press, 2007), pp. 27-44 (p. 36).

¹⁰² See Frances Harris, 'Living in the Neighbourhood', for a comparison of the Evelyns' reactions.

¹⁰³ For an alternative opinion, see Phyllis Rackin's essay, in which she argues that the reason modern scholars think 'misogyny is everywhere' in the early modern period is because we have been trained to look for it. Phyllis Rackin, 'Misogyny is Everywhere', in *A Feminist Companion to Shakespeare*, ed. by Dymphna Callaghan (Oxford: Blackwell, 2000), pp. 42-56.

understand how gender was only one factor in a complicated negotiation between many social concerns, some of which may have held greater importance, including religion and changing cultural ideologies.

Conclusion

This chapter has argued that Lady Ranelagh held an exemplary knowledge of natural philosophy for a seventeenth-century woman, and that maintaining a pious reputation allowed her to maintain a public profile as a female natural philosopher without inviting criticism from her contemporaries. Her radical religious perspective attracted her to the utopian ambitions of the Hartlib Circle, and it was in this network that her most significant writings about and explorations of natural philosophy took shape. However, during the Restoration, she became less involved in natural philosophy as she dedicated herself to other projects informed by her religious agenda, such as securing medical care for the sick and promoting the toleration of religious nonconformists. While a surface-level reading of this transition could present Lady Ranelagh as further support of Londa Schiebinger's 'turning-point' model, I have suggested that her change appears to have been as much or more a matter of personal choice as of external societal pressure.

Lady Ranelagh's example, however, should not be taken as a model against which all early modern gentlewomen should be judged. I do not mean to suggest that all elite seventeenth-century Englishwomen were faced with a choice between piety and natural philosophy once formal scientific academies were established. Her natural philosophy was entrenched in the socio-religious excitement of the Interregnum, but that would not have been the case for all gentlewomen. Instead, through this analysis, I hope to have

shown that 'big picture' models which focus on one category of analysis, such as gender, can produce a reductive view of history. Issues which were of contemporary importance to the subjects, such as religion, must be added into any study of gender and science.

Since medicine was the dominant branch of natural philosophy that Lady Ranelagh practised, the second half of this thesis will focus exclusively on this subject. Through analysing both her receipt books and her extant letters, I will consider what type of medicine she practised and the composition of her medical network. The wealth of material in her hand also allows a more thorough discussion of gender, genre and literary production, to ascertain how Lady Ranelagh manipulated the domestic manuscript genres appropriate to a gentlewoman to construct her reputation as a medical authority.

Chapter 4: Lady Ranelagh's Receipt Books

Within the sphere of receipt book scholarship, Lady Ranelagh's manuscripts feature among the most frequently used texts.¹ There are three manuscript receipt books associated with her: British Library Sloane MS 1367, Wellcome Library Western MS 1340 and Royal Society Library MS RB/2/8 (formerly MS 41). Literary historians, such as Catherine Field and Edith Snook, have discussed her manuscripts in studies on early modern women's relationship to and textual representations of their bodies.² Historians of medicine, including Andrew Wear, Doreen Evenden Nagy and Jennifer Stine, have used them to illuminate the practice of domestic medicine.³ All these writers draw briefly on her manuscripts to support other arguments, but do little to enhance our understanding of Lady Ranelagh's actual relationship to the texts. While these manuscripts have been widely discussed by receipt book scholars, those who work on Lady Ranelagh, such as Betsey Taylor Fitzsimon, Ruth Connolly and Carol Pal, have neglected them. Sarah Hutton's *ODNB* entry on Lady Ranelagh offers an essential foundation for enquiries into

¹ I will use the seventeenth-century term 'receipt book' when referring to the manuscript compilation, as this contemporary term more accurately describes these documents than our modern term 'recipe book'. However, I will use the word 'recipe' when referring to an individual 'recipe' both for the sake of differentiating it from the whole, but also to distinguish it from the other type of 'receipt', or proof of payment. See the above section 'Definitions and Conventions'.

² Catherine Field, "'Many hands hands': Writing the Self in Early Modern Women's Recipe Books", in *Genre and Women's Life Writing in Early Modern England*, ed. by Michelle M. Dowd and Julie A. Eckerle (Aldershot: Ashgate, 2007), pp. 49-63; Edith Snook, "'The Beautifying Part of Physic': Women's Cosmetic Practices in Early Modern England", *Journal of Women's History*, 20 (2008), 10-33.

³ Andrew Wear, *Knowledge & Practice in English Medicine, 1550-1680* (Cambridge: Cambridge UP, 2000), pp. 51-52; Andrew Wear, 'The Popularization of Medicine in Early Modern England', in *The Popularization of Medicine 1650-1850*, ed. by Roy Porter (London: Routledge, 1992), pp. 17-41; Doreen Evenden Nagy, *Popular Medicine in Early Modern England* (Bowling Green, OH: Bowling Green State University Popular Press, 1988), p. 62; Jennifer K. Stine, 'Opening Closets: The Discovery of Household Medicine in Early Modern England' (unpublished doctoral thesis, Stanford University, 1996).

her diverse interests and for identifying members of her various intellectual, political and religious circles, but even she concludes with ‘apart from her letters, Lady Ranelagh left no writings from which may accurately be gauged the depth of her learning or the scope of her interests’.⁴

Essays by Lynette Hunter and Jayne Archer are the only two studies to have approached Lady Ranelagh’s receipt books with the aim of better understanding the compiler herself. Hunter’s article focussed primarily on Wellcome Library Western MS 1340 to show how Lady Ranelagh used the household as a place of chymical and medical experimentation.⁵ An excellent chapter in Jayne Archer’s unpublished Cambridge doctoral thesis offered a detailed account of the attributions within two of Lady Ranelagh’s receipt books in order to identify members of her intellectual circles.⁶ While these articles were important in calling attention to an oversight in contemporary scholarship, both serve only as a starting point, and need correcting on some points. For example, they both ignore Royal Society Library MS RB/2/8 and treat the other two manuscripts together, though the material properties of these volumes suggest that each was related to Lady Ranelagh in a different way and should therefore be treated differently today.

The three manuscript receipt books associated with Lady Ranelagh are very different from each other, and must be analysed individually to present a more accurate reading of the texts and to clarify her relationship to them. In 2002, George Justice

⁴ ‘Katherine Jones, Viscountess Ranelagh (1615-1691)’ in *ODNB*.

⁵ Lynette Hunter, ‘Sisters of the Royal Society: The Circle of Katherine Jones, Lady Ranelagh’, in *Women, Science and Medicine: 1500-1700*, ed. by Lynette Hunter and Sarah Hutton (Stroud, Gloucestershire: Sutton Publishing, 1997), pp. 178-197.

⁶ Jayne Archer, ‘Women and Alchemy in Early Modern England’ (unpublished doctoral thesis, University of Cambridge, 2000).

argued that ‘paleography and bibliography remain essential to the accurate (and imaginative) interpretation of literary texts’.⁷ This point has been reinforced by the recent revival in material readings of texts, where scholars use the textual artifact itself to gain information about the circumstances surrounding its original creation, use, subsequent inheritance and survival.⁸ The multiple functions that an individual receipt book may have served, as both Margaret Ezell and Sara Pennell have documented, require that such texts be read carefully for clues about compilation practices and various forms of use.⁹

This chapter offers the first detailed study of Lady Ranelagh’s three manuscript receipt books and substantially revises the current understanding of each text. There will be three sections — one dedicated to each manuscript — and each will begin by considering the physical properties of the manuscript itself. From this starting point, I will suggest various methodologies for reading each receipt book to gain a better understanding of Lady Ranelagh’s relationship to the text. I hope to show that each manuscript is associated with her in a unique way, and therefore each requires a different approach.

⁷ George L. Justice, ‘Introduction’, in *Women’s Writing and the Circulation of Ideas: Manuscript Publication in England, 1550-1800*, ed. by George L. Justice and Nathan Tinker (Cambridge: Cambridge University Press, 2002), pp. 1-16 (p. 11).

⁸ For instance, the conference *Material Readings in Early Modern Culture, 1550-1700*, held at the University of Plymouth on 11-12 April 2008, comprised papers by eminent early modernists who applied material readings to texts. Developed essays from this conference will be published as James Daybell and Peter Hinds, eds. *Material Readings of Early Modern Culture, 1580-1700* (Forthcoming: Basingstoke: Palgrave, 2010). The University of Pennsylvania Press has a series on ‘Material Texts’ and Palgrave is beginning one on ‘Material Readings’.

⁹ Margaret J. M. Ezell, ‘Domestic Papers: Manuscript Culture and Early Modern Women’s Life Writing’, in *Genre and Women’s Life Writing in Early Modern England*, ed. by Michelle M. Dowd and Julie A. Eckerle (Aldershot: Ashgate, 2007), pp. 33-48, esp. pp. 41-46; Sara Pennell, ‘Perfecting Practice? Women, Manuscript Recipes and Knowledge in Early Modern England’, in *Early Modern Women’s Manuscript Writing: Selected Papers from the Trinity/Trent Colloquium*, ed. by Victoria E. Burke and Jonathan Gibson (Aldershot: Ashgate, 2004), pp. 237-58, and Pennell, ‘Introduction’, in *Women in Medicine: Remedy Books, 1533 - 1865*, ed. by Sara Pennell (Woodbridge, CT: Primary Source Microfilm, 2004), no page numbers.

BL Sloane MS 1367

The British Library holds a tall, thin octavo, catalogued as Sloane MS 1367, which contains 291 numbered recipes of sophisticated medical experiments, many including rare ingredients and complicated chymical procedures. The title page reads ‘My Lady Rennelagh’s Choice Receipts as also some of Cap^t Willis who valued them above gold’, with Captain Willis probably referring to the physician Thomas Willis, with whom she discussed medicine.¹⁰ This manuscript is written entirely in one hand, which is not that of Lady Ranelagh herself.¹¹ It was probably written by a man, as the hand exhibits traces of secretary influence, a style of handwriting that women were not taught. Many of the recipes in the latter half are recorded with elaborate abbreviations and symbols (which are explained in an index on the final folio entitled ‘Our Abbreviations’), and some recipes are written in Latin. Standard alchemical cipher is employed, especially in the latter half of the manuscript, and these symbols are explained in a comprehensive glossary in the back.

¹⁰ The earliest recorded reference to interaction between Lady Ranelagh and Thomas Willis was at the Duke of Kendal’s death in May 1667. In a letter to her brother Burlington, Lady Ranelagh wrote, ‘Dr Willis being brought heather about ye two little Dukes I got his opinnion asked about my D[eare]st Sister takeing ye Scarborough waters’. See BL Add. MS 75354, fols. 70-73, Letter, Lady Ranelagh to Lord Burlington 25 May [1667]. Willis knew both Robert Boyle and Hartlib. Willis and Boyle met sometime before 1656, when both were in Oxford experimenting with chymistry. He moved to London in 1667 and established a practice in St. Martin’s Lane. Willis later turned more toward ‘neurologie’, and his work on the subject is what he is best remembered for today. See Robert G. Frank, Jr., *Harvey and the Oxford Physiologists: Scientific Ideas and Social Interaction* (Berkeley: University of California Press, 1980). In this manuscript, the title ‘Captain’ may refer to when he served in the King’s army in 1644-46. The sub-heading of folio 32v of the Sloane manuscript reads ‘~~Capt~~ ^Dr^ Willis receipts’, with the change from ‘Captain’ to ‘Doctor’ offering further verification that ‘Capt Willis’ is indeed the physician Dr Thomas Willis.

¹¹ This is based on my comparison of this receipt book with over 50 letters written and signed by Lady Ranelagh, spanning from 1643-1689 (cited in detail in the bibliography). Lady Ranelagh’s hand is a large, careless italic and the anonymous compiler of Sloane MS 1367 wrote in a tall, thin italic with traces of secretary hand. He or she often fluctuated between printing and a cursive italic, sometimes with a single word. Key characteristics in the shape of Lady Ranelagh’s letters, such as the ascender on her ‘p’ and the manner in which she connects letters, mark these as two different hands. For a comparison of the two hands, see Appendices C and E-2.

Little is known about the provenance of BL Sloane MS 1367. This receipt book was part of the physician Sir Hans Sloane's collection, purchased for the British Museum by an Act of Parliament in 1753. Sloane's own catalogue of his manuscripts compiled c.1694 does not include this receipt book, so he had probably not acquired it by that date.¹² However, as Sloane continued collecting rare books and manuscripts until his death in 1753, and held administrative positions in the Royal Society from 1685 until his death 68 years later, his eventual ownership of this text is not surprising.¹³ What is important is that Lady Ranelagh's manuscript was thought by Sloane, a man interested primarily in sophisticated scientific and medical texts (rather than practical manuals), to be worthy of collection. The British Library catalogue states that 'The manuscript collection of Sir Hans Sloane (1660-1753) reflects the breadth of his learning, as well as his particular interest in medicine and natural history'.¹⁴ By inclusion in this collection, Lady Ranelagh's receipt book shares a place among the manuscripts of Sir Isaac Newton, Sir Thomas Browne, and other members of Sloane's scientific community.¹⁵

The date of this manuscript's composition is equally difficult to determine with any certainty. There are no dates within the manuscript and the book was rebound by the British Museum in the mid-nineteenth century, further obscuring any possible clues that could be gained from the original binding.¹⁶ The recipes in the book are often attributed to different people, but the order in which they appear bears no relationship to the dates

¹² Arnold Hunt (Curator of Manuscripts at the BL), personal email communication, 14 June 2005.

¹³ See entry for 'Sir Hans Sloane (1660-1753)' in *ODNB*.

¹⁴ British Library, <<http://www.bl.uk/catalogues/illuminatedmanuscripts/TourCollFound.asp#Sloane>> [Accessed 24 June 2008.]

¹⁵ For more on the collection, see E. J. L. Scott, *Index to the Sloane manuscripts in the British Museum* (London, 1904).

¹⁶ Arnold Hunt, personal email communication, 14 June 2005. The new binding reads 'Lady Ranelagh's Medical Receipts', correcting the incorrect spelling of her name on the title page, and specifying that the contents are medical in subject matter.

of the people to whom they are attributed. Further, the date when a recipe was originally composed does not necessarily reflect the date when it was recorded in another person's receipt book, as recipes continued to travel through oral and scribal circles long after the date of their original creation.

One of the clues to the manuscript's approximate date is its watermark: an IHS with a cross ascending from the middle of the H, with horizontal chain-lines that perfectly divide the H from the exterior I and S. This combined pattern of the watermark and chain-lines is almost identical to one that Edward Heawood catalogues as being of late-seventeenth-century Dutch paper.¹⁷ Heawood's vague chronology offers little help in specifying the manuscript's date of compilation, but it does speak to the nature of the overall book, which appears to have been compiled and amended over several years, or possibly even decades.

The odd format of the book (a very tall and thin octavo) is more typical of a financial accounting book than a receipt book.¹⁸ The reason for choosing such a volume is unclear, but it suggests that this was not a presentation copy and was compiled for personal use.¹⁹ This is further supported by the internal presentation of the manuscript. While the volume begins with some attempt at clear presentation, such as neat handwriting and ruled margins, this quickly slips away as the book descends into cluttered pages with recipes written in a mixture of shorthand and cipher. Accordingly,

¹⁷ Edward Heawood, *Watermarks: Mainly of the Seventeenth and Eighteenth Centuries* (Hiversum, Holland: Paper Publications Society, 1957), p. 27. Heawood explains that it was only after 1700 that England became less dependent on foreign sources for its paper supply.

¹⁸ Adam Smyth connects this format to financial accounting books. See Adam Smyth, 'Almanacs, Annotators, and Life Writing in Early Modern England', *English Literary Renaissance*, 38 (2008), 200-44 (pp. 203-07).

¹⁹ For examples of presentation copies of manuscript receipt books, see BL Egerton MS 2197, Receipts Collected by Elizabeth Digby, and see Wellcome Library Western MS 213, Mrs. Corylon's Receipt Book.

this book appears to have been used, as shown by corrections and additions to many of the recipes (which appear to be in the same hand as that which wrote the manuscript as a whole) and by burns and spill marks on some of the pages.²⁰

There are no further attributions to Lady Ranelagh in the volume and no external source links it to her, as no will or book list for her is extant.²¹ The only solid connection to her is the title page displaying her name. When considering this in relationship to the physical properties of the manuscript itself, it seems most probable that BL Sloane MS 1367 is a contemporary copy from another manuscript that was compiled by her, and includes selections from a second manuscript owned by Thomas Willis.²² Jennifer Stine notes that ‘An individual’s name, for example, might appear as part of the title of a collection, thereby indicating that the contents were copied from a book in his or her possession. An individual might also be credited for a series of recipes following the insertion of a sub-heading in a book’.²³ In BL Sloane MS 1367, the recipes attributed to Willis are clearly marked, and are separated from those related to Lady Ranelagh. On 32v, there is a sub-heading ‘~~Capt~~ ^Dr^ Willis receipts’ and on 38v there is a note ‘thus Capt Willis’ with a solid line drawn below it. Therefore, numbered recipes 126-164 are attributed to Willis, and the compiler’s careful attention to detail suggests that the remaining recipes in this volume originated with Lady Ranelagh. This may be further supported by the manner in which he returns to listing the remaining recipes after the sub-selection of Willis’s. After the solid line used to conclude Willis’s section, there is a

²⁰ BL Sloane MS 1367, fols. 48 and 49.

²¹ This is based on my own research and conversations with other scholars working on Lady Ranelagh, such as Ruth Connolly.

²² It is unclear whether Lady Ranelagh’s original manuscript had this selection of Willis’s recipes, or if the compiler of BL Sloane MS 1367 copied them from Willis’s book.

²³ Jennifer Stine, ‘Opening Closets’, p. 142.

recipe for sore eyes, and then recipe 166 has the heading ‘My Lady:’ before the title ‘the Lucatellus or red balsam made in an other manner. V.3’.²⁴ The intimate title ‘My Lady:’ is reminiscent of the title page, and by not naming the lady in question, he probably indicates a return to Lady Ranelagh’s recipes. There is no significant space to suggest that the compiler forgot the Lady’s name and would return to it later with an addition; it appears, rather, that this is another sub-heading, indicating that now he is beginning the list of recipes that originated with ‘his Lady’.

If this is the case, then the contents of BL Sloane MS 1367 probably did originate with Lady Ranelagh at some point, but we cannot say that she was involved in the composition of this actual manuscript. If we trust that the compiler maintained his careful process of annotating his sources, then we may assume that the remaining 253 numbered recipes in this volume were copied from a collection compiled by Lady Ranelagh. Though not as reliable as a receipt book in her hand, this copy is still important because it is the only manuscript volume for which she is named ‘author’.

Authorship and Receipt Books

In the seventeenth century, contemporaries used the term ‘author’ to refer to both those who compiled receipt books, and those who wrote individual recipes, suggesting that studies on authorship and receipt books must take place on a macro- and micro-level. For example, the title page of Robert Boyle’s posthumously published collection of recipes, *Medicinal Experiments*, promised that it was ‘Published from the Author’s

²⁴ BL Sloane MS 1367, fol. 38v.

Original Manuscripts’, and it included ‘The Author’s Preface’.²⁵ Though the recipes within originated from various sources and were not only those ‘authored’ by Boyle, he is explicitly referred to as the author of the whole collection. In the preface, Boyle distinguishes himself from other receipt book authors by explaining that he had actually tried the recipes in his collection:

’tis so usual for Authors, especially that Write either Systems or Collections, to set down store of Prescriptions dictated by their Conjectures, not their Tryals ... there is a great deal of difference betwixt being told by an Author many things, and among ...them, this or that Drug, Receipt is good for such Disease, and to have particular notice given of it, and not only to be confirm’d that ’tis good, but to be told how good it is.²⁶

One who compiled a receipt book collection was considered an author, but so was one who wrote an individual recipe. Contemporary evidence of this terminology may be found in one of the receipt books associated with Lady Ranelagh: Wellcome Library Western MS 1340. After recipe number 635, ‘For the Gout’, there is a note that, ‘The Authour of this Receipt is not very Exact either in ye time of taking it or in the quantity of the Garlick, but says he drinks it often especially at those Seasons when there is most danger of the Gout’.²⁷ Interestingly, the author of the volume appears to have faithfully copied the original recipe and then offered a critical commentary on the anonymous recipe author’s method of delivery, evidencing two overlapping systems of authorship. When analysing the receipt books associated with Lady Ranelagh, we must therefore consider where she functions as the author of a receipt book as a whole, and as the author of a recipe in isolation.

²⁵ Robert Boyle, *Medicinal Experiments: Or, A Collection of Choice and Safe Remedies*, 3 vols (London, 1692-94), II (1693), sigs. A2r-A8r.

²⁶ Boyle, *Medicinal Experiments*, sigs. A7r-v.

²⁷ Wellcome Library, Western MS 1340, fol. 139v.

Adrian Johns has explained that ‘An *author* is taken to be someone acknowledged as responsible for a given printed (or sometimes written) work; that is, *authorship* is taken to be a matter for attribution by others, not of self-election. A *writer* is anyone who composes such a work. A writer therefore may or may not attain authorship’.²⁸ While Johns’s terminology may not apply to all manuscript receipt books, particularly those that appear to have been compiled over several generations and name either no, or many, author(s), it may be employed here to assist with a reading of BL Sloane MS 1367. The title page of this manuscript says ‘My Lady Rennelagh’s Choice Receipts’, demonstrating that the writer attributed the volume to her. Though it was he who wrote and compiled the text in its extant form, having made his own additions throughout and probably having added the sub-section of Thomas Willis’s recipes, the writer does not sign his name on the cover or fly leaf, thereby forfeiting his claim over authorship. Instead, the readers of the text are told that they are about to learn Lady Ranelagh’s ‘choice receipts’, suggesting not only that they originated with her, but also that they represent a prime sample selected from a larger collection. Margaret Ezell has argued that ‘One of the most striking characteristics of the domestic papers of early modern women is how frequently the author or authors lays aggressive claim to the working space of the page — “Elizabeth Freke Her Book”, “Ann Glyde Her Book” — and also how in their signatures they lay claim to authorship as subsequent generations will of possession’.²⁹ Here, Ezell uses two manuscript receipt books compiled by seventeenth-century Englishwomen to show how signing and titling the first page of a manuscript allowed women to claim ownership of and authority over a text, both for the sake of contemporaries and

²⁸ Adrian Johns, *The Nature of the Book: Print and Knowledge in the Making* (Chicago: University of Chicago Press: 1998), p. xxi.

²⁹ Ezell, ‘Domestic Papers’, p. 45.

posterity.³⁰ While it would of course be incorrect to say that Lady Ranelagh herself ‘laid an aggressive claim to [the] authorship’ of this book, we may say that the anonymous compiler did so for her, presenting Lady Ranelagh as a source of medical authority on a par with the accredited physician Thomas Willis.

However, the receipt book genre must be treated differently from other forms of textual compilation specifically because the items within could be used to gain a promised outcome, be it medical, culinary or other. Receipt books developed out of many other genres, including medieval books of secrets, ‘how-to’ manuals, commonplace books and verse miscellanies. The multiple genres from which they borrowed resulted in these texts being used in many ways, as both Sara Pennell and Margaret Ezell have noted.³¹ Some receipt books demonstrate that they were compiled with a conscious effort towards elaborate presentation, possibly having served as a nuptial gift or as a mark of status. Other manuscripts appear to have been created with the primary intention of private use, demonstrated by the authors having chosen small book formats, using shorthand, and continuously adding to and changing recipes when additional knowledge or experience was gained. But many receipt books, if not most, include some indication of both traditions — with the careful organisation and presentation of the volume demonstrating that the author invested much time and expense in its creation, but with changes and additions in multiple hands suggesting that it also was used. Therefore, if an author is identified on the title-page of a receipt book, his or her name functions not only in a similar fashion as those who are authors of works of fiction, but the name also carries the mark of an experienced practitioner, or medical authority, who can testify to the

³⁰ The examples are Elizabeth Freke, BL Add. MS 45718 and Anne Glyde, BL Add. MS 45196.

³¹ See Pennell, ‘Perfecting Practice’, and Ezell, ‘Domestic Papers’.

effectiveness of the recipes within. Indeed, ‘author’ and ‘authority’ share the Latin root ‘auctor’, meaning ‘to make to grow, originate, promote, increase’.³² Giving the ‘author’ of a receipt book is therefore similar to giving the source for an individual recipe within the compilation. The name serves to document the source of a remedy, showing contemporaries’ interest in tracking the oral and scribal transmissions of knowledge. It also acts as a stamp of approval, suggesting that this recipe was recommended by this individual.

A look at contemporary printed receipt books shows that similar conventions held sway in print publication volumes, where individuals’ names were used on title pages of receipt books in order to authenticate, authorise, and ultimately sell a compilation. Lynette Hunter established that it was in the 1650s that the first printed receipt books attributed to women were published: *A Choice Manuall of Rare and Select Secrets in Physick and Chyrurgery* (1653), *A Queens Closet Opened* (1655), and *Natura Exenterata* (1655).³³ Through a series of literary devices, including portraits as frontispieces and introductions that claimed that the recipes had been copied from the author’s private manuscripts, these texts were linked to Elizabeth Grey, Countess of Kent (1582-1651); Queen Henrietta Maria (1609-1669); and Aletheia Howard, Countess of Arundel (d. 1654), respectively. The actual relationship of these women to the texts, most specifically *The Queens Closet Opened*, has been the subject of debate over the past decade, many dismissing their alleged contributions.³⁴ Yet while determining active participation in the

³² See the etymology for the words ‘author’ and ‘authority’ in the *OED*.

³³ Hunter, ‘Sisters of the Royal Society’, p. 178.

³⁴ In addition to Hunter, ‘Sister of the Royal Society’, see Jayne Archer, ‘The Queen’s Arcanum: Authority and Authorship in *The Queens Closet Opened* (1655)’, *Renaissance Journal*, 1.6 (2002), 14-26; Elizabeth Spiller, ‘Introductory Note’ for *Seventeenth-Century English Recipe Books: The Early Modern Englishwoman*, Series 3, Part 3, Vol. 3, (Aldershot, Hants: Ashgate, 2008), pp. ix-li.

composition and publication of such documents is important for some readings of the texts, it does not change the fact that these women are unequivocally being used as authorities for the subject matter within the book. The prominent display of a royal or aristocratic woman's name as 'author' promised that the contents inside were of a high quality, having been selected or approved by one who is knowledgeable of and experienced in the field. Many procedures in receipt books were representative of women's housewifery duties, and making and distributing medicines to the household and community was expected of elite women.³⁵

While exhibiting similar conventions, printed and manuscript texts must be read differently. Though these three printed receipt books used an elite woman to authorise their compilations and to solicit a female audience, the title page of BL Sloane MS 1367 was not being used to market the volume to a greater audience. Because Lady Ranelagh's original manuscript is no longer extant, we cannot study it for bibliographic evidence of her possible intention to scribally publish the manuscript.³⁶ It is also unclear how widely her original manuscript circulated, raising the question of whether this was the only copy made of her manuscript, or whether it circulated privately among a select group of medical practitioners. Instead, the private nature of this copy of the manuscript allows us to see how her name functioned as a mark of authority on a much more intimate level.

The limited number of extant manuscripts by Lady Ranelagh requires us to make the best use of available resources in order to gain a more complete understanding of how she presented herself and as contemporaries perceived her. The remainder of this section

³⁵ Christina Hole, *The English Housewife in the Seventeenth Century* (London: Chatto & Windus, 1953).

³⁶ Harold Love, *Scribal Publication in Seventeenth-Century England* (Oxford: Clarendon Press, 1993); Arthur Marotti, *Manuscript, Print, and the English Renaissance Lyric* (Ithaca: Cornell University Press, 1995); Peter Beal, *In Praise of Scribes: Manuscripts and Their Makers in Seventeenth-Century England* (Oxford: Clarendon Press, 1998).

therefore analyses Lady Ranelagh as the author of BL Sloane MS 1367, but approaches this contention through two different methodologies. The following sub-section applies the first method, using this text both as a whole and through the individual recipes, to see how it reflects back on the ‘author’, Lady Ranelagh. If her name is used as a source of authority, on what type of knowledge was she an authority? Was this knowledge typical for a woman, and specifically one of her status? To find answers to these questions, the next sub-section will begin by comparing BL Sloane MS 1367 with other contemporary receipt books to determine if her status or gender contributed to, or hindered, her knowledge of medicine.

Gendered Authority in Receipt Books

The most recent research on early modern receipt books suggests that iatrochemistry (chemical medicine) was the exception, and that most of the ingredients named in seventeenth-century recipes were readily available household products. Elaine Leong and Sara Pennell have argued that ‘the majority of the ingredients used [in early modern medical recipes] were herbs commonly found in kitchen gardens or spices increasingly common to kitchen spiceboxes’.³⁷ Their essay uses a survey by Leong of over 9,000 recipes in 28 collections (15 manuscript and 13 printed) in which it was found that ‘rose, wine, sugar, honey, egg and a number of herbs and spices such as rosemary, nutmeg, aniseed, liquorice and cinnamon were among the most common ingredients used’.³⁸ This comprehensive survey led Leong and Pennell to argue that ‘domestic

³⁷ Elaine Leong and Sara Pennell, ‘Recipe Collections and the Currency of Medical Knowledge in the Early Modern Medical Marketplace’, in *Medicine and the Market in England and Its Colonies c. 1450-c.1850*, ed. by Mark S. R. Jenner and Patrick Wallis (Basingstoke: Palgrave, 2007), pp. 133-152 (p. 135).

³⁸ Leong and Pennell, ‘Recipe Collections’, p. 135.

medicine was reliant upon easily accessible ingredients rather than newly introduced exotics, such as Peruvian bark, or the metallic and mineral components advanced in Paracelsian and Helmontian pharmacopoeia'.³⁹

BL Sloane MS 1367 includes some recipes with accessible ingredients. For example, wine, eggs, and snail shells are commonly used, and objects such as 'a nutmeg or a walnut' are occasionally used as measurements.⁴⁰ Some of the ingredients also reflect popular folk traditions, demonstrating that occult lore still found its way into the receipt books of the elite. For example, body parts from human corpses were still named as an ingredient in some domestic manuals, and one recipe for the 'bloody flux' in this manuscript calls for part of 'a man yt hangs on ye gallows', which then should be powdered and mixed with wine or acetum (acid).⁴¹

While there are some standard medical remedies, the majority of the recipes in this collection show a serious interest in the latest developments in iatrochemistry, with most remedies containing rare ingredients and involving complicated chymical procedures.⁴² Chymical processes such as calcination and sublimation are standard in her recipes and the *materia medica* range widely to include metals, minerals and chemicals. A rough estimate indicates that about 75% of the recipes in this manuscript include a

³⁹ Leong and Pennell, 'Recipe Collections', p. 136.

⁴⁰ BL Sloane MS 1367, fols. 3r-v and 9v.

⁴¹ BL Sloane MS 1367, fol. 44r. Bernard Capp offers another mid seventeenth century example of this tradition. He notes that a Mrs. Tillotson 'told [Robert] Hooke that "the moss of a man's skull' was "a sovereign remedy for the falling sickness". Mrs Tillotson was probably Elizabeth, wife of John Tillotson, the future archbishop of Canterbury. See Capp, *Astrology and the Popular Press: English Almanacs 1500-1800* (Faber and Faber: London, 1979), p. 211.

⁴² Though the origins of Paracelsian physics in England date to the sixteenth century, it is not until the seventeenth century when chymical medicine became widespread and began threatening the standard Galenic tradition. See Charles Webster, 'Alchemical and Paracelsian Medicine', in *Health, Medicine and Mortality in the Sixteenth Century*, ed. by Charles Webster (Cambridge: Cambridge University Press, 1979) p. 301-334, and Margaret Pelling and Charles Webster, 'Medical Practitioners', in *Health, Medicine and Mortality*, pp. 165-235.

chymical component, but a careful cataloguing of each recipe is required before a percentage can be confirmed with any certainty.

Some of the complicated procedures appear to have been included more for the benefit of displaying chymical erudition than for helping to procure and maintain health through effective self-treatment. One example in the manuscript is ‘To make a Powder & water for a Fistula’, a sophisticated chymically-based salve used to treat sores or wounds:

T[ake] of Alum 4 lb of Coperas 4 lb put these into a head peece & let ym dissolve to [symbol for water] over ye [symbol for fire] having in readinesse these things following Mercury Sublimate 4.O yt is Ounces, aquafortis 3.O quicksilver 2.O [auripigmentum?] 1.O, [lardi?] greases 6.O, powder those things which are to be powdered finely & put ye aqua fortis & quicksilver in with ye powders into ye aforesaid liquors, stirrin ym well tog[ethe]r let ym B[oil] till they come to a body, in ye boyling put in 2 drames of ye Spirit of vitrioll, soe let ym B[oil] to a stone, wn it is boyled to yt hard body let it stand 24 h[ours] beat it to a P[owder] mix it with 6.O of f[ine] Bole Armonick in h[ours]. Keep it in a box or Gallypot for yr use, the P[owder] will keep 7 years, wn you m[ake] ye [symbol for water] it must be of some minerall [symbol for water] yt Iron has been quencht in. Shake in as m[uch] of ye powder as will lye on a shilling into ev[ery] quart wn it B[oils] if it be not gently shok in it will make all [symbol for water] flye out of ye pot. T[ake] linnen cloaths wett ym in this [symbol for water] & wring ym out & lay ym [b.t.] double as hot as they can be suffered to ye greived part doe thus twice a day & in short time it will draw out all ye oreifice all ye foulnesse of ye bones of any be & [scrave?] & dry up ye humors & heale ye part.⁴³

This lengthy, complicated recipe requires an unusually large quantity of ingredients, most of which must be produced by chymical procedures or purchased from an apothecary. It is written with the assumption that the reader will already have some compound products on hand, such as ‘Mercury Sublimate’ and ‘Spirit of vitrioll’, and that he or she will already have enough previous knowledge and experience to know which ingredients should be turned to powder and which should be turned to liquid.⁴⁴ This receipt book

⁴³ BL Sloane MS 1367, fols. 24v-25r.

⁴⁴ On the development of technical writing, see Elizabeth Tebeaux, ‘Women and Technical Writing, 1475-1700’, in *Women, Science and Medicine*, pp. 178-97.

includes two other remedies for treating the fistula and over a dozen more recipes for treating various types of wounds or sores, which might suggest that in reality one would choose an easier recipe using accessible ingredients and less time-consuming preparation.⁴⁵

While a recipe such as this may have been collected by Lady Ranelagh because of her belief in the benefits of new chymical methods, it is likely that it was also collected specifically as a novelty. Collecting exotics and novelties served as an aristocratic pastime in early modern England, a practice that becomes evident when studying seventeenth-century receipt books. Contemporaries began using expensive, rare ingredients such as unicorn's horn, and there was an increased reliance on foreign goods in volumes compiled by aristocrats.⁴⁶ Marjorie Swann identified that in John Gerard's *Herball* (1597), he observed that 'in the past, goldenrod had been highly regarded because it "came from beyond the sea"; however, once it was commonly grown, no one cared about it even though it was valuable for staunching blood, a situation "which plainly setteth forth our inconstancie and sudden mutabilitie, esteeming no longer of any thing, how pretious soever it be, than whilst it is strange and rare"''.⁴⁷

The chymical component of BL Sloane MS 1367 is suggested as early as the title page. By stating that Willis 'valued [her recipes] above gold', the anonymous compiler makes alchemical allusions, identifying Lady Ranelagh as a chymist before one even sees

⁴⁵ For the two other recipes to treat the fistula, see BL Sloane MS 1367, fols. 17r & 34r.

⁴⁶ See Wear, *Knowledge & Practice*, pp. 67-78. Unicorn's horn was probably rhino's horn. On this topic, see Paula Findlen, 'Inventing Nature: Commerce, Art, and Science in the Early Modern Cabinet of Curiosities', in *Merchants and Marvels: Commerce, Science and Art in Early Modern Europe*, ed. by Pamela H. Smith and Paula Findlen (New York: Routledge, 2002), pp. 297-323 (pp. 306-07).

⁴⁷ Marjorie Swann, *Curiosities and Texts: The Culture of Collecting in Early Modern England* (Philadelphia: University of Pennsylvania Press, 2001), p. 25.

the individual recipes within.⁴⁸ Few things may be valued above gold except a recipe for the Philosopher's Stone, which would promise to turn base metals into gold. Many chymists were trying to find a correct version of this elusive recipe, and the Hartlib Papers show that Lady Ranelagh was one of them.⁴⁹ Willis's approval here also links Lady Ranelagh with an accredited male physician, separating her from the 'lady chymists' who were viewed by some male contemporaries as inexperienced dabblers.⁵⁰ Willis himself was influenced by the new Helmontian chymical theories, and he incorporated these into his medical practice.⁵¹

This manuscript represents an exception to most early modern receipt books, and specifically those owned by women. The extent to which women incorporated new Paracelsian ingredients into their customary medical practices has not been fully researched, but Elaine Leong's survey suggests that this was rare for both men and women.⁵² Margaret Pelling has pointed to the legal ramifications for women experimenting with Paracelsian medicine and has documented the prosecution of female lay practitioners for their use of metals in medicines.⁵³ Hannah Allen's diary provides another example, recording that as late as 1683 her maid had trouble procuring opium for her, as some apothecaries 'said they had none, others said it was dangerous and would

⁴⁸ An alternative reading is that Willis valued his own recipes above gold; however, the ambiguous language means one cannot confirm either possibility.

⁴⁹ See Chapter 2, above.

⁵⁰ See HP 51/102A-106B, Letter, John Beale to Samuel Hartlib, 26 March 1659.

⁵¹ See *ODNB* entry for 'Thomas Willis (1621-1675)'. 'Helmontian' is in reference to the theories of van Helmont. The terms Helmontian and Paracelsian medicine are both used to refer to iatrochemistry, sometimes interchangeably. See Andrew Wear, *Knowledge & Practice*, and A.G. Debus, *The English Paracelsians* (London: Oldbourne, 1965).

⁵² Elaine Leong, 'Medical Recipe Collections in Seventeenth-Century England: Knowledge, Text and Gender' (unpublished doctoral thesis, University of Oxford, 2005), pp. 95 & 106-07. Jayne Archer is working on a monograph concerning women and alchemy in the household.

⁵³ Margaret Pelling, 'Thoroughly Resented? Older Women and the Medical Role in Early Modern London', in *Women, Science and Medicine*, pp. 63-88 (p. 74).

not sell it her'.⁵⁴ This resulted in Allen replacing the ingredient with spiders. The expansive list of rare ingredients in Lady Ranelagh's manuscript therefore separates her from most contemporary female lay practitioners, suggesting that her elite status did more to facilitate her acquisition of knowledge than her gender did to hinder it.

While it may be that a seventeenth-century female aristocrat would have had greater access to chymical medicine than a middling-sort male lay practitioner, Lady Ranelagh's knowledge of chymistry appears even more advanced than most women of her status. In fact, the book might be better catalogued as a book of chymical experiments than as a medical receipt book. For example, in addition to the overall sophistication of the recipes, one of the rarest attributes of this receipt book is that it ends with an alchemical cipher which explains the shorthand used throughout the manuscript. The symbols for metals are listed with their complementary planetary influence (e.g. copper is Venus, and is represented by the sign that is now standard for 'woman'). The cipher list is standard for a seventeenth-century alchemical text, but it is not found in many receipt books or 'how-to' manuals. The list may have been copied from another manuscript or printed text, as similar keys appear in works such as Kenelm Digby's *Chymical Secrets* (posthumously published in 1682) and *Natura Exenterata* (an encyclopedic volume published in 1655 which was mentioned above in relationship to the Countess of Arundel).⁵⁵ It is significant here because it makes this receipt book atypical for an aristocratic woman, and links the volume (and therefore, by extension, Lady Ranelagh)

⁵⁴ Hannah Allen, 'A Narrative of God's Gracious Dealings with that Choice Christian Mrs. Hannah Allen', in *English Women's Voices 1540-1700*, ed. by Charlotte F. Otten (Miami: Florida International University Press, 1991), pp. 262-65 (p. 62).

⁵⁵ Digby, *Chymical Secrets, And Rare Experiments in Physick & Philosophy* (London, 1683), sig. A8v, and Anonymous, *Natura Exenterata, Or Nature Unbowelled by the Most Exquisite Anatomizers of Her* (London, 1655), p. 380.

with the larger practice of seventeenth-century chymistry, and not just iatrochymistry. According to Lyndy Abraham, ‘There were more alchemical books published in the mid- to late-seventeenth century than had ever appeared previously’.⁵⁶ By this time, an interest in chymistry had become a mark of gentility, specifically for men aspiring to be virtuosi, but also for gentlewomen who used chymical techniques such as distillation when preparing medicines and sugarcraft presentations.⁵⁷ Yet the list of ciphers in this volume links it more with knowledge expected of a chymical experimenter than with a gentlewoman.

The only non-medical recipes in BL Sloane MS 1367 are those in a short series of unnumbered cosmetic recipes included towards the end of the collection, appearing after seven blank folios and written on the versos of two blank pages.⁵⁸ There is a chymical preparation for hair dye, which includes ingredients such as calcined lead and sulphur, as well as a face wash made from the readily available household products almonds, rain water, and newly laid eggs. Yet what is more interesting is a recipe for ‘Paint’, which begins with a personal attribution that is crossed out. The recipe describes how a nameless woman (probably she whose name was crossed out of the title) made her powder, speaking of her in the third person, and concluding with the personal anecdote ‘yet a better thing I never saw or found’. After this recipe, an alternative remedy is offered, beginning with ‘or’. This ends with a note in a darker ink that is squashed into

⁵⁶ Lyndy Abraham, *Marvell and Alchemy* (Aldershot: Scholar Press, 1990), p. 18.

⁵⁷ On chymistry and male gentility, see Stephen Clucas, ‘The Correspondence of a XVII-century “chymical gentleman”: Sir Cheney Culpeper and the Chymical Interests of the Hartlib Circle’, *Ambix*, 40 (1993): 147-70. On sugarcraft, see Lynette Hunter, ‘“Sweet Secrets” from Occasional Receipt to Specialised Books: The Growth of a Genre’, in *‘Banqueting Stuff’: The Fare and Social Background of the Tudor and Stuart Banquet*, ed. by C. Anne Wilson (Edinburgh: Edinburgh UP, 1991), pp. 36-59.

⁵⁸ Though it should be said that some of the medical remedies also appear to have been used for cosmetic purposes. For example, the recipe ‘to fasten & whiten ye tæeth & heale ye gums & cure the mouth-scurvy’ promises that it will both heal the gums (medical) and whiten the teeth (cosmetic). See BL Sloane MS 1367, fol. 39r. The purely cosmetic recipes may be found on fols. 75v and 76v.

the blank space, written in the same hand but clearly not at the same time as the recipe was originally written. The note reads ‘NB. Cerusse, fresh as the painters use called Spanish Cerusse is ye best’. Ceruse (another name for white lead, but also commonly used to refer to ‘cosmetics’ as a whole) was used as a pigment in both paint and cosmetics.⁵⁹ The way in which these recipes are separated from the rest of the numbered recipes in the manuscript and ‘hidden’ on two versos at the end may suggest that these were not part of Lady Ranelagh’s original book and were added by the copyist, as ‘blanks’ were often included in collections to encourage the reader to annotate the text.⁶⁰ However, because they are in a compilation attributed to Lady Ranelagh and there are no sub-headings or individual attributions indicating a shift in authorship, we may connect Lady Ranelagh to the practice of collecting cosmetic recipes, just as the contemporary who compiled this receipt book has done.

Collecting a cosmetic recipe does not indicate the personal use of cosmetics, as even some men collected these recipes. John Pechey’s late seventeenth-century text *The Compleat Herbal of Physical Plants Containing all such English and foreign herbs, shrubs and trees as are used in physick and surgery* includes the category ‘Cosmetick, Beautifying’ in the table of contents. Though the title of his book suggests that the contents will be medical in subject matter, the inclusion of cosmetics as a subject under which one may search in a medical herbal further demonstrates the blurring of traditional boundaries, as ingredients and remedies could be used for multiple purposes.⁶¹ Cosmetics

⁵⁹ See *OED* entry for ‘ceruse’. On white lead, see ‘The Alchemy Web Site’. <<http://www.levity.com/alchemy/substance.html>> [Accessed 7 August 2005] Also see Farah Karim-Cooper, *Cosmetics in Shakespearean and Renaissance Drama* (Edinburgh: Edinburgh University Press, 2006), p. 4.

⁶⁰ Adam Smyth, ‘Almanacs, Annotators, and Life Writing’, pp. 203-06.

⁶¹ Pechey, *The Compleat Herbal* (London, 1694), sig. A4r.

were also used in medical aftercare, as one may seek a face wash that was good for cleansing the face of blemishes for both medical and cosmetic reasons after treatment for a disease like measles, smallpox, or the King's Evil (scrofula). Kenelm Digby's *Chymical Secrets* also includes a 'An Excellent Cosmetick prepared out of [symbol for silver]', which involves a very complicated and time-consuming chymical preparation, ending with the promise that there should be a 'Pomatum remain[ing] in the bottom as white as Snow, which is Excellent to whiten the Face'.⁶² The dangerous chemicals in Lady Ranelagh's cosmetic recipes are typical of such recipes in the seventeenth century, and the harshness of the ingredients was something some contemporaries realised and criticised.⁶³ Frances Dolan has argued that, 'In the early modern period, there was good reason for attacking the use of cosmetics: they were costly and imported (hence "foreign" and corrupting); they encouraged an emphasis on physical beauty at the expense of the soul, an objection constantly reiterated; and many were corrosive and thus actually damaging to women's beauty and health, as some contemporaries were aware'.⁶⁴

Lady Ranelagh's Puritan sensibilities suggest it would have been extremely out of character for her to paint her face or dye her hair. However, Dolan's emphasis on the foreignness and expense of cosmetics speaks to the trend of collecting exotics, an activity which we have already witnessed in relationship to this manuscript. Therefore, if we are to believe that that she did collect these three recipes, this collection practice probably

⁶² Digby, *Chymical Secrets* (London, 1683), pp. 133-34.

⁶³ Margaret Cavendish thought that the harsh chemicals used were both unhealthy and counterproductive to beauty. She said, 'most Paintings are mixed with Mercury, wherein is much Quicksilver, which is of so subtil a malignant nature, as it will fall from the Head to the Lungs, and cause Consumptions ... rot the Teeth, dim the Eyes, and take away both the Life and Youth of a Face'. See Margaret Cavendish 'Of Painting', in *Worlds Olio* (London: 1655), pp. 84-87; quoted in Patricia Phillippy, *Painting Women: Cosmetics, Canvases and Early Modern Culture* (Baltimore: Johns Hopkins University Press, 2006), p. 7.

⁶⁴ Frances E. Dolan, 'Taking the Pencil out of God's Hand: Art, Nature and the Face-Painting Debate in Early Modern England', *PMLA*, 108 (1993), 224-39 (229).

derived from her larger interest in chymistry, thereby allowing these recipes to sit comfortably in the receipt book as a whole. Just as the complicated procedure for making the powder and water to treat fistula (quoted above) would probably not have been a first choice for treatment, but was instead collected because of its novelty and expense, so may we assume that these cosmetic recipes were included to exhibit a wider interest in domestic chymical experimentation.

Overall, Lady Ranelagh appears to be the ‘author’ of a complicated book of chymical recipes, evidencing her interest in collecting a range of remedies, but focusing predominantly on those related to chymical medicine. Because the book exists as a copy and not an original, we cannot search her manuscript for signs of use, and so cannot make a convincing case that she actually practised an elite subsection of domestic medicine. However, the copyist of this manuscript does appear to have used some of the recipes within, and her name no doubt served to authorise the effectiveness of these cures. Her name on the title page shows that at least one contemporary identified her as a source of chymical and medical authority.

The next sub-section introduces a second methodology, in which the authors of individual recipes are studied to gain a clearer sense of Lady Ranelagh’s medical network. Though it is possible that BL Sloane MS 1367 is not an exact replica of the original receipt book that Lady Ranelagh compiled, the detailed annotation practices used by the copyist and his emphasis on her on the title page as a source of authority are suggestive of his desire to preserve the book as she intended it. He appears to have carefully retained the original notes and recipe attributions, as the additional information would certainly have helped him to discern the effectiveness and practicality of a recipe. Therefore, the

names within the manuscript could provide us with information regarding from whom she collected medical recipes, offering some insight into her intellectual network.

Lady Ranelagh's Medical Circle

While the majority of the recipes in BL Sloane MS 1367 do not give the name of the source, possibly suggesting that they originated with Lady Ranelagh, there are some recipes with names attached. The sophistication of the majority of the recipes might lead one to suspect that the attributions would consist solely of aristocrats and doctors, but they actually represent a wide range of individuals, spanning gender, educational credentials, social status, and religio-political affiliations. There are 43 unique attributions in this manuscript, and an overview of the individuals' titles demonstrates that most of the recipes she gathered were from those who were socially below her.⁶⁵

Thirteen sources have the title 'Ms' and six have the title 'Mr', representing the largest social grouping in this manuscript. These were probably members of the lower gentry whom she could have met either in Ireland or London. The only name in this category we can identify is 'Mr Green', who offered a remedy for the stone.⁶⁶ In Royal Society Library RB/2/8, another receipt book associated with Lady Ranelagh which will be discussed in this chapter, 'Mr Greene' is said to be the 'apothecary at great St. Bartholomew'.⁶⁷ Hartlib also collected a recipe from him, probably around 1659.⁶⁸ While this recipe originated with an apothecary, others may have come from upper servants in

⁶⁵ See Appendix E-1. I have not included the name 'Dr Chayme' in this count, as his name was listed in the section of the volume attributed to Thomas Willis.

⁶⁶ BL Sloane MS 1367, fol. 52v.

⁶⁷ Royal Society Library, RB/2/8, fol. 26r.

⁶⁸ In a bundle of notes, he includes a recipe 'Pro hydrope' that lists 'Mr Green Apothecary in great St Bartholomew' as the source. The date is given earlier in this bundle in relation to another recipe, but it probably reflects the date of this bundle as a whole. See HP 30/1/7B. Notes and Recipes, in German, Latin & English.

the household. Robert Boyle's work diary from 1666 mentions 'my sisters Woman (Mrs Margeret Manning)', demonstrating that a lady's personal maid or 'companion' could also have this title if she came from a respectable family.⁶⁹ Though Mrs Manning is not mentioned in this receipt book, one recipe gives 'Ms. Mary Manner' as a source, a name close enough to raise the question of whether they are indeed the same person.⁷⁰

The second largest group comprises aristocrats and upper gentry, with eight attributions. There are four 'Ladies', two 'Lords', one 'Sir', and one 'Earl' named in the manuscript. They may be roughly described as Lady Ranelagh's social equals. This is the only social grouping for which she used the familiar phrase 'My' before their names, confirming that she was intimate with the person. This might suggest that while her social circle was mainly comprised of equals, she was happy to collect medical advice from diverse members of society with whom she interacted for other reasons, such as purchasing medicinal ingredients.

The next category, with almost equal representation, are physicians. There are seven individuals with the title 'doctor', excluding the one in Willis's section of the manuscript and the frequently anthologised recipe for the plague by 'Dr Burges', which would have been taken from a printed or other manuscript source.⁷¹ Dr Willis is also not included in this category, as he is usually referred to as 'Capt Willis' in this volume. If these two names were added to the tally, this would change the total to make doctors the second largest grouping. Most of the doctors have unfamiliar names and have been

⁶⁹ BL Add. MS 4293, fols. 50r-v. Boyle's Work Diary 26, 13 April 1666. Quoted from <www.livesandletters.ac.uk> [accessed 29 July 2005].

⁷⁰ BL Sloane MS 1367, fol. 39r.

⁷¹ For two contemporary printed examples, see John French, *The Art of Distillation* (London, 1653), p. 53, and Hannah Woolley, *The Accomplisht Ladys Delight* (London, 1675), p. 40.

untraceable, such as ‘Dr Swallows’.⁷² These could be mis-transcriptions from the original manuscript or misspellings of foreign doctors’ names. Alternatively, they may not be accredited physicians, as some medical practitioners adopted this title without professional or academic qualifications, meaning that the term was somewhat ambiguous in seventeenth-century England.⁷³

The final categories are much smaller. There are two names which have no title: ‘Kircher’ is the source of three recipes, and another three originated with a ‘Harvey’. The latter may be the famous physician William Harvey (1578-1657), who had a professional relationship with Willis.⁷⁴ There is one ‘Captain’, who I have argued, based on contextual evidence, is actually ‘Doctor’ Thomas Willis. At least four names indicate that the recipe is from a printed source, suggested by page numbers after the recipe, or simply by it being recognisable through its popularity.⁷⁵ The inclusion of printed sources could indicate that some of the other recipes were taken from printed or manuscript sources and not directly from the individual named.

A gendered view of the manuscript shows a surprisingly even distribution between male and female sources — almost exactly half and half. After eliminating printed sources and names without a title, the remaining attributions may be divided into

⁷² BL Sloane MS 1367, fol. 17v.

⁷³ Margaret Pelling, *Medical Conflicts in Early Modern London: Patronage, Physicians, and Irregular Practitioners 1550-1640* (Oxford: Oxford University Press, 2003), Ch. 5.

⁷⁴ BL Sloane MS 1367, fol. 42v. Harvey also knew Dr Francis Prujean, another physician possibly referenced in this manuscript, as the two worked together in the Royal College of Physicians. See *ODNB* entry or ‘Francis Prujean (c. 1597-1666)’.

⁷⁵ ‘Dr Burges Souveraigne Receipt ag^t the Plague’ (fol. 5v) was a very popular recipe that is in many print and manuscript receipt books of the mid and late seventeenth century. For example, see John French, *The Art of Distillation* (London, 1653), p. 53. ‘Gerard’s Powder for to conserve & restore the sight’ (fol. 26r) is probably from the popular author John Gerard. Three of the six recipes attributed to ‘Culpeper’ (fols. 45r-46r & 50v) include a page number at the end which suggests it was copied from a printed book by Nicholas Culpeper. The source ‘[Acbillier]?’ also has page numbers after his recipes (fol. 52r). For more information, see Appendix E-1.

two groups: eighteen male sources and seventeen female sources.⁷⁶ This is atypical of most volumes in the genre, as Elaine Leong has shown that receipt book compilers gathered the majority of their recipes from people of their own gender.⁷⁷ Lady Ranelagh appears to have enjoyed a very public life and to have come into contact with a wide variety of people through her diverse intellectual networks, which could be why she appears exceptional.

We might never be able to determine with certainty the identity of most sources in this receipt book, but there are some that we can discern thanks to corroborative evidence and detailed notation within the manuscript. Some of the recipe authors in Lady Ranelagh's receipt book were fellow members of the Hartlib Circle. The chymist Sir Kenelm Digby is the author of four recipes in this volume.⁷⁸ Digby and Lady Ranelagh had met sometime before September 1658, when she wrote a letter to Hartlib containing a recipe which she said had been 'given me by Sr Kenelme Digby, wth most Extraordinary Commendation from his owne experience against festers & inflammation'.⁷⁹ Another Hartlibian reference may be found on the final page before the index, which includes several notes or recipes in Latin that cite 'Kircher' three times. He may be the 'One Kircher an Irish Gentleman' whose recipes Hartlib discusses in his 'Ephemerides' in the early 1650s.⁸⁰ The first recipe in the volume, 'My Lady Barringtons rare Balsum', is a frequently anthologised universal remedy authored by Lady Joan Barrington (c.1558-

⁷⁶ For the male sources, this comprises seven 'Dr's, six 'Mr's, three 'Lord's, one 'sir', one 'Earl' and one 'Capt'. Among the female sources, there are thirteen 'Ms's and three 'Ladies'. A recipe for the 'Redface' on folio 55r refers to a 'Ms _____', but then later notes refer to the source as 'he'. Because it is unclear whether this was a male or female source, it was not included in either count.

⁷⁷ Elaine Leong, 'Medical Recipe Collections in Seventeenth-Century England: Knowledge, Text and Gender' (unpublished doctoral thesis, University of Oxford, 2005), p.186.

⁷⁸ See BL Sloane MS 1367, fols. 19v-20r, 54v.

⁷⁹ HP 66/8/1A-B, Extracts and Recipes, Lady Ranelagh and Kenelm Digby.

⁸⁰ HP 28/1/56A, 'Ephemerides' 1650, Part 2. The notes here suggest that Robert Boyle was trying Kircher's recipes, offering a further connection to Lady Ranelagh. Also see HP 29/5/17B, 'Ephemerides' 1655, Part 2.

1641).⁸¹ Further proof of her identity may be found later in the manuscript, as a recipe entitled ‘The wound oyle’ includes a note that it had been purchased by ‘‘Sr ffrancis Baringtons Lady’.⁸² The intimate phrase ‘My Lady’ suggests that Lady Ranelagh personally knew Lady Barrington, though it is unclear where they would have met, as Barrington died in England in 1641 before Ranelagh moved there. They may have met during one of Lady Ranelagh’s earlier visits to the country, or they could have been introduced through correspondence by a mutual friend, as Hartlib was communicating with Lady Barrington about ‘Chymical subjects’ as late as 1641.⁸³

Some of the names in this manuscript can be traced to English families with political connections to Ireland. The recipe ‘Against the Scurvy My Lady Leysters Way’ probably came from Dorothy Sidney (née Percy) (c.1598-1659). She was married to Robert Sidney, 2nd Earl of Leicester, who held several Irish positions from 1641 to 1643, including Lord Lieutenant of Ireland and General of the Army.⁸⁴ The source given for the popular chymical remedy ‘Lucatellus Balsam’ is ‘My L. Reynolds’, who is probably Lady Priscilla Reynolds (née Wyndam) (1626-91), wife of the lawyer and politician Sir Robert Reynolds (1601-78).⁸⁵ Reynolds was in Dublin from 1642 to 1643 when he served as commissioner representing the English Parliament, and Lady Ranelagh may have met

⁸¹ BL Sloane MS 1367, fol 2r. For more on Lady Barrington, see Arthur Searle, ‘Preface’, in *Barrington Family Letters 1628-1632*, Camden Society Fourth Series, Vol. 28 (London: Royal Historical Society, 1983), pp. vii-viii (p. vii).

⁸² BL Sloane MS 1367, fol. 16v. She married Sir Francis Barrington (c.1560-1628) in 1597. See *ODNB* entry for ‘Joan Barrington (née Williams or Cromwell), Lady Barrington (c. 1558-1641)’.

⁸³ HP 7/49/1A-2B. Copy Letter in scribal hand, Hartlib to Lady Barrington, 21 August 1640. There are also references to her in the ‘Ephemerides’ of 1640 and 1641. See HP 30/4/67A & 30/4/68A, Ephemerides 1640, Part 4; HP 30/4/77A, ‘Ephemerides’ 1641. However, it seems that Lady Ranelagh met Hartlib in the following year, so perhaps they were not introduced by Hartlib, but by another mutual acquaintance in this circle.

⁸⁴ G.E.C’s *Complete Peerage*, VII (1929), p. 555.

⁸⁵ BL Sloane MS 1367, fol. 2v. Robert Reynolds was knighted in 1660, so the recipe must date after this. As a knight, he would have been called ‘Sir Robert Reynolds’, so the phrase ‘My L. Reynolds’ must refer to ‘My L[ady] Reynolds’, his wife. They married on 23 May 1646. See *ODNB* entry for ‘Sir Robert Reynolds (1600/01-1678)’.

him then.⁸⁶ In 1647 he was associated with the ‘peace-party fringe’ of Parliament, with which Lady Ranelagh was also connected.⁸⁷ It is unknown how she came to know him or his wife, but their overlapping interests indicate many potential reasons for interaction. Another interesting Irish connection may be found in the recipe ‘The Gout water of the E. of Staffords’. This is probably a mis-transcription from Lady Ranelagh’s original copy, as there was no Earldom of Stafford until 1688, a date which seems too late for inclusion in this manuscript. The original manuscript probably referenced the ‘Earl of *Strafford*’, a title which did exist at the time of the manuscript’s compilation, and probably referred to Thomas Wentworth (1593-1641).⁸⁸ Wentworth and Lady Ranelagh’s father, the first Earl of Cork, were on good terms for a short time when Wentworth first arrived in Dublin in 1633, but their relationship quickly deteriorated. A heated feud would last between the two until Wentworth, by then Earl of Strafford, was executed in 1641.⁸⁹ This recipe could be dated from the early years of amicability between the families, or she may have received it through her sister-in-law Elizabeth, later 2nd Countess of Cork, who was Wentworth’s niece.⁹⁰

A closer examination of the gentry, aristocrats and physicians listed in this manuscript suggests that Lady Ranelagh maintained a medical circle that was as politically diverse as it was socially diverse. Thomas Willis and Thomas Wentworth were

⁸⁶ See *ODNB* entry for ‘Sir Robert Reynolds (1600/01-1678)’.

⁸⁷ Quoted in *ODNB* entry for ‘Sir Robert Reynolds (1600/01-1678)’. Also see Chapter 1 above.

⁸⁸ Thomas Wentworth (1593-1641) was the first with this title, created Earl in 1640 but executed for treason in 1641. His son William inherited all of his titles, but Parliament revoked these honours. William Wentworth did not gain the title Earl of Strafford until an Act of Parliament in May 1662, which he held until his death in 1695. While the citation in the receipt book could refer to the second Earl of Strafford, there is no evidence that he knew the Boyle family and it seems likely that there may have been lingering ill-feelings between the two families. See G.E.C.’s *Complete Peerage*, XI (1949), pp. 324-28.

⁸⁹ See Nicholas Canny, *The Upstart Earl: A Study of the Social and Mental World of Richard Boyle, First Earl of Cork 1566-1643* (Cambridge: Cambridge University Press, 1982), and *ODNB* entry for ‘Thomas Wentworth, first earl of Strafford (1593-1641)’.

⁹⁰ Elizabeth Clifford married Richard Boyle, Lord Dungarvan, in 1633 or 34 in a match that Wentworth helped arrange. See *ODNB* entry for ‘Thomas Wentworth, first earl of Strafford (1593-1641)’.

royalists. Sir Kenelm Digby was not only a royalist but a Catholic, and he served as chancellor in Henrietta Maria's household during the Civil Wars.⁹¹ Lady Leicester was a moderate royalist to whom Parliament gave custody of the king's young children in May 1649.⁹² The Reynolds and Barrington families were Parliamentarians, and Lady Joan Barrington was Oliver Cromwell's aunt. It appears that Lady Ranelagh's medical network crossed political boundaries, suggesting an open transmission of knowledge at a time when communities and families were torn apart over political affiliations.

A more in-depth evaluation of the reliability of network reconstruction through attributions in receipt books is required before we can solidly confirm that these individuals were members of Lady Ranelagh's medical circle. It is possible that she did not receive all of these recipes directly from each source, and further contextual evidence would be needed to confirm these relationships. However, this diverse circle of medical sources does appear representative of Lady Ranelagh's life more generally, as she was able to maintain friendships and familial relationships with politically influential people on both sides of the party line, throughout the Civil Wars and Interregnum as well as after the Restoration, as was previously discussed in Chapter One. In the next chapter, an analysis of her medical network as verified by her letters will help to contextualise the information provided here.

In conclusion, BL Sloane MS 1367, though not in Lady Ranelagh's hand, is still important as a copy of her receipt book, and the only extant manuscript volume to name her as the author on its title page. Because of the copyist's careful transcription of her manuscript, the sources of individual recipes have been retained. This allows us to probe

⁹¹ See *ODNB* entry for 'Sir Kenelm Digby 1603-1665'.

⁹² See entry for 'Robert Sidney, second earl of Leicester (1595-1677)' in *ODNB*.

the manuscript for clues to Lady Ranelagh's medical network, which appears to have been both socially and politically diverse. A point for future study could be to consider this manuscript for indications of what printed texts Lady Ranelagh was reading. Some of the individual recipes appear to have been copied from printed sources, and there is one lengthy section that was probably copied from one of Nicholas Culpeper's books.⁹³ Though this was beyond the scope of this chapter, it would be worth returning to the text to explore the question of readership.

Wellcome Library Western MS 1340

The Wellcome Library holds a thick quarto, catalogued as Wellcome Western MS 1340, which was purchased by the Library in an auction at Hodgson's in London on 20 July 1922. The Head of Archives and Manuscripts at the Wellcome explains that the Hodgson's catalogue merely identifies the manuscript as a seventeenth-century 'cookery book' and includes it under 'other properties', so there is no clue as to who consigned it to auction.⁹⁴ The Hodgson firm no longer exists, so this scarce information represents the extent of possible knowledge on the manuscript's provenance. The manuscript was catalogued in 1960 as having been compiled by 'The Boyle Family',⁹⁵ apparently based on the attributions within it to members of the Boyle family, including the recipe 'Spirit of Roses my brother Robert Boyls way'.⁹⁶ The volume is still in its original calf binding and contains 159 folios. It is not an elaborate, expensive binding, and there are no clasps,

⁹³ See Appendix E-1 for names and folio numbers of individual recipes that were probably copied from printed sources. The long copy from one of Nicholas Culpeper's texts includes page numbers, so comparing these against Culpeper's books could reveal the title and edition of the book she owned. See BL Sloane MS 1367, fols. 45r-46r & 50v.

⁹⁴ Richard Aspin, personal email communication, 18 August 2005.

⁹⁵ Amanda Engineer, 'The 17th-Century "Lady Doctor"', in *Friends of the Wellcome Library and Centre Newsletter*, 31 (2003), pp. 2-5 (p. 4).

⁹⁶ Wellcome Library, Western MS 1340, fol. 19r.

gilded edges or embossed letters which would be typical of presentation copies. The spine has deteriorated, and if there was once a title here it is no longer extant. The Wellcome catalogue gives the compilation date as c.1675-c.1710, an estimation evidently based on two dates included in the text: a recipe dated 'August. 31st 1675' and a note on the verso of the final leaf, which says 'May the 1.st 1711.'.⁹⁷ However, there is an earlier date in the manuscript, relating to a recipe copied from a letter written by Christopher Davenport to the Earl of Orrery, and signed 16 April 1662.⁹⁸ Significantly, this recipe is recorded on a page that appears four folios after the recipe dated 1675, confirming that the date of receiving the recipe was not the date when it was recorded into this manuscript. The watermark is a horn encompassed in an elaborate symmetrical crescent design, similar to those found in the Bowrey Papers from the late seventeenth and early eighteenth centuries, a broad chronology that corresponds with this text, which was probably compiled slightly after BL Sloane MS 1367.⁹⁹

The book is written in at least three hands: a sloppy italic hand (Hand One); a tight italic scribal hand with an emphasis on presentation (Hand Two); and a careful but large italic which appears to have written only two recipes (Hand Three).¹⁰⁰ There is an increased emphasis on presentation toward the end of the manuscript, as represented by a strict adherence to margins, uniform presentation of attributions, titles and numeration,

⁹⁷ The earliest date may be found on 139r, 'Mr Thomas Elliot of the Bedchamber his Receipt for the Gout. August 31.st 1675.' The final date is inscribed on fol. 159v, the final folio of the volume.

⁹⁸ Wellcome Library, Western MS 1340, fols. 143r-v.

⁹⁹ Edward Heawood, *Watermarks: Mainly of the Seventeenth and Eighteenth Centuries* (Hiversum, Holland: Paper Publications Society, 1957). The watermark most closely resembles that in example number 2680, but examples 2677 and 2686-2694 are also similar.

¹⁰⁰ For ease of reference, I will continue referring to these hands throughout this thesis. Hand One may be found on 3r 'to make Inke very good'; Hand Two may be found on 3v 'Against the Scurvy approved.'; Hand Three may be found on 4r 'Lady Barkshires watter for a sore brest' and 4v 'The Lady Carterets unguent for the bloody flux', which are the only two recipes written in this hand. See Appendices E-3, E-4, and E-5.

and the use of a more elaborate scribal hand, specifically evident in the majuscule letters.¹⁰¹ It may be that Hand Two is the same hand as the elaborate scribal hand found at the end of the manuscript, or this may be a fourth hand.¹⁰²

The pagination offers a substantial clue as to the compilers' original intentions for the book. While the pages were recently foliated in pencil (and these are the numbers that I will use in my references), there were two attempts at organisation by the original compilers. In the original number sequence, folio 4r was marked page 1, with numbers following on the recto and verso of each folio until folio 29r, which is numbered 51. This pagination is carefully disguised in elaborate drawings of knots and faces, and one must carefully scrutinise the text to find the hidden numbers.¹⁰³ A close analysis of these designs suggests that they were chosen for practical purposes, dictated by the shapes of the original numbers and how these could best be hidden. Folios 134r - 135v served as the index for the original volume, though these pages have since been reused, with recipes written by Hand Two having been squeezed into the blank space. The title 'Table' may still be seen on the top of folio 134r, and it is followed by a list of recipe titles and the numbers 1 through 79. These all appear to have been written by Hand One in brown ink, but were later crossed out so extensively by a hand using black ink that they have been rendered almost entirely illegible. The first recipe in the numbered list was 'Lady Barkshires water for a sore brest' and the last numbered recipe is number 49, for opium pills, which are numbered as 6 and 83 (respectively) in the comprehensive sequencing that came later. This table offers further proof that the additions by Hand Two were

¹⁰¹ For example, see fol. 103r.

¹⁰² See Wellcome Library, Western MS 1340, fols. 139v and 140r, which is where the initial shift appears to happen.

¹⁰³ See Appendix E-3, where the original page number '31' is hidden in a design on the upper right corner, and Appendix E-5, where the original page number '1' is hidden in a cross in the upper left corner.

added later and that Hand One did not intend this to be a collaborative endeavour. Instead, Hand One left many blank folios (both before and after the table) and even wrote additional numbers when there were no recipes to correspond with them, suggesting that she or he intended to add to this later.¹⁰⁴ Significantly, while this table is more of a ‘table of contents’, listing the titles of the recipes in the order in which they appear in the text, the later index written in Hand Two offers a highly organised alphabetical list, where one may look up ‘dropsy’ and find ten numbers which correspond to the ten recipes within the manuscript that relate to curing the dropsy. This highly organised method is one that is employed more frequently in seventeenth-century collections, and the generational difference in organisational method may provide evidence of one change in generic conventions that took place throughout the course of the century.¹⁰⁵

Hand One wrote the majority of the recipes in folios 5r - 59r.¹⁰⁶ The second compiler, Hand Two, added the remainder of the recipes, instituted a sequencing that included all the recipes in the book, and created a new comprehensive index alphabetised by recipe title.¹⁰⁷ Hand Two also amended recipes written by Hand One, but this practice is never seen in the reverse manner.¹⁰⁸ The overlapping of hands, often on a single page, makes it tempting to assume that this was a collaborative effort. However, a closer analysis suggests that Hand One began this manuscript, possibly with Hand Three, as the

¹⁰⁴ Numbers 50-78 are listed to fill the space of folio 135r &v, though there were only 49 recipes at the time that this table was created.

¹⁰⁵ See Leong, ‘Medical Recipe Collections’, esp. Ch. 1.

¹⁰⁶ Hand One does not appear again until the recto of the final page in the manuscript (fol. 159r), after the complete index, offering a recipe ‘For ye Grese in horse Heeles’. This recipe is not included in the numbered sequence that links together the rest of the volume, nor is it included in the original table or the later index. It was probably written at the same time that Hand One wrote the rest of the recipes at the beginning of the compilation, but the placement at the end suggests that for some unknown reason he or she decided to separate this recipe from the remainder of the volume.

¹⁰⁷ For the index, see Wellcome Library, Western MS 1340, fols. 156r-158v.

¹⁰⁸ For example, see Wellcome Library, Western MS 1340, fol. 55r.

two recipes written in Hand Three are included in the original pagination scheme implemented by Hand One.¹⁰⁹ However, Hand Two eventually took over by restructuring the whole compilation and adding new recipes, both at the end of the volume and in the blank space on pages that had already been used. Significantly, when recipes by Hands One and Two appear on the same page, Hand Two is always at the bottom and appears squashed into the available space, suggesting that he or she added these at a later date and not simultaneously with the original compiler.¹¹⁰

Because there is no title page or signature claiming ownership or authorship, the hands in which the receipt book was written offer some of the only clues about the original compilers. Most scholars who use this manuscript assume that Hand One is that of Lady Ranelagh, which is probably based on the library catalogue's description of the manuscript. According to the Wellcome Library online catalogue:

The most frequent hand, probably a lady's, is a neat italic: the other hand is that of an older person, who is probably the original compiler. Receipt No. 53 is headed 'To make Spirit of Roses my brother Robert Boyls [sic] way': this is written in the older hand, and is perhaps that of Katherine, afterwards Lady Ranelagh ... The identity of the writer of the greater part of the entries is unknown, but it is possible that she could have been a secretary who copied out the receipts for Katherine Boyle.¹¹¹

Andrew Wear also identifies Lady Ranelagh as 'probably the compiler'.¹¹² Lynette Hunter unquestioningly accepts that this is Lady Ranelagh's receipt book and includes a transcription of two recipes in her appendix to reveal Lady Ranelagh's medical practice.¹¹³ Jayne Archer ventures further to suggest that this receipt book was a

¹⁰⁹ These two recipes are on fols. 4r-v in Wellcome Library, Western MS 1340.

¹¹⁰ For example, see Wellcome Library, Western MS 1340, fols. 5v & 6r.

¹¹¹ Wellcome Library Western Manuscripts and Archives Catalogue. <<http://archives.wellcome.ac.uk>> [Accessed 13 January 2005]

¹¹² Wear, 'Popularization of Medicine', pp. 35-36.

¹¹³ Hunter, 'Sisters of the Royal Society'.

collaboration by Lady Ranelagh and her sister, Mary Rich, Countess of Warwick, theorising that the more prevalent second hand might be that of Lady Warwick.¹¹⁴ With the various assumptions and uncertainties surrounding this manuscript, a detailed analysis of the hands will lay the foundation necessary to allow further scholarly enquiry to flourish.

Because Hand One is similar to, but not obviously, that of Lady Ranelagh, I have done extensive research comparing Wellcome Western MS 1340 to over fifty letters written and signed by Lady Ranelagh, written from 1659 to 1690.¹¹⁵ Though her writing becomes a bit less carefully formed with age, the main characteristics of her hand, including the slight slant to the right and the manner in which she connects her letters, do not change. When comparing the two hands, several differences appear. Overall, Lady Ranelagh's handwriting, spelling and spacing between words are always more consistent than those produced by Hand One. While some letters written by Hand One are shaped in a similar way, such as the miniscule 'p' with a tall ascender or the miniscule 'r' being used to connect to the following letter on the top, there are other letters that are substantially different. For instance, the miniscule 't' by Hand One is written in two different ways, but the most common manner (where it is printed with a foot and not connected to the following letter) is never found in any of Lady Ranelagh's letters. I am therefore proposing that Hand One in Wellcome Western MS 1340 is not that of Lady Ranelagh's. This raises the question: whose hand is it?

¹¹⁴ Jayne Archer, 'Women and Alchemy in Early Modern England' (unpublished doctoral thesis, University of Cambridge, 2000), Ch. 7. For a biographical introduction to Lady Warwick, see the 'Introduction' above.

¹¹⁵ BL Add. MS 75354, fols. 50-119 comprises twenty-nine letters from Lady Ranelagh to her brother, the Earl of Burlington and Cork. West Sussex Record Office, Petworth House, Orrery MS 13219, unpaginated has twenty letters in Lady Ranelagh's hand. National Archives of Scotland, GD45/14/237/1-5 and GD/406/1/3797 comprise five letters in her hand (and an additional one by her though not in her hand). Also see Appendix C.

After much deliberation, I am proposing that Hand One belongs to Lady Ranelagh's sister-in-law Margaret Boyle (née Howard), Countess of Orrery (1623-1689).¹¹⁶ When analysing eight letters written by Lady Orrery during the 1670s, Lady Orrery's irregular spelling and the spacing between, and connection of, words are very distinctive, matching that of Hand One in Wellcome Library Western MS 1340.¹¹⁷ When comparing the hand in Appendix D-1 (a letter from Lady Orrery) to that in Appendix E-3, (Hand One in this receipt book), several distinctive letter formations emerge which are not seen in Lady Ranelagh's handwriting. These letters include the miniscule 't' (printed with a foot), the majuscule 'S' (a curly long 'S' not connected to the next word), and the majuscule 'E' (bubbly with an additional loop on the top and not connected to the next letter).¹¹⁸ Further, Lady Orrery's commitment towards maintaining the health of her family, most specifically her husband (and Lady Ranelagh's brother), Roger Boyle, can be found in her extant letters, further contextualising the medical interest suggested by her contribution to this receipt book.¹¹⁹

Hands Two and Three in this manuscript remain unidentified, and may be those of the daughters of Lady Orrery or a hired scribe. It appears that Lady Orrery began compiling this receipt book and that it was finished by someone else. This second attempt

¹¹⁶ Margaret Howard (daughter of Theophilus Howard and Elizabeth Home) married Roger Boyle on 27 January 1641. See *ODNB* entry for 'Roger Boyle (1621-1679)'.

¹¹⁷ See Appendix D. I have compared the hand against seven autograph letters by Lady Orrery. These are BL Stowe MS 206, fols. 1, 15, 61, 107-108, 117-18 and BL Stowe MS 207, fols. 297-98, 318-19. There is also one unsigned letter fragment by Lady Orrery, probably to Lady Ranelagh, in West Sussex Record Office, Petworth House Archives, Orrery MS 13219. The collection is mistitled, stating that it holds '19 Letters from Lady Ranelagh to Lord and Lady Orrery', when in reality there are 21 Letters: 20 from Lady Ranelagh and one unsigned fragment. The attribution of this letter was also confirmed by Carol Pal, who used this archive. Email communication, 11 July 2007. The fragment in a different hand is the one that begins '[...] find my daughter by doct Barwick and Doct Lower'.

¹¹⁸ These can be compared with Lady Ranelagh's formations of these letters. One can find the miniscule 't' in Appendix C-2, the majuscule 'S' in Appendix C-1, and the majuscule 'E' in Appendix C-3.

¹¹⁹ Eleventh child of Richard Boyle, First Earl of Cork and his second wife, Catherine Fenton. See Appendix A-1 and Kathleen M. Lynch, *Roger Boyle: First Earl of Orrery* (Knoxville: University of Tennessee Press, 1965).

at organisation may have begun with her approval, but was continued after her death. The back page is dated 1711, twelve years after Lady Orrery had died, suggesting that two generations of the Orrery family were involved in compiling their family receipt book.

The link between Hand One and Lady Orrery is also supported by the attributions within the receipt book. There are two letters copied into the volume, both of which contained recipes for the gout intended for the Earl and Countess of Orrery. The first one is a letter signed by E. Dickinson and sent to the Countess of Inchiquin, dated May 26 1677.¹²⁰ This was probably written by Edmund Dickinson (1624-1707), a physician known for his use of chymical methods.¹²¹ He begins by saying that according to the symptoms that the Countess of Inchiquin described in her last letter, he ‘can not but conclude that the Distemper of ye Rt honoble the Countess of Orrery is a Rheumatical Distemper & that kind which is naturally apt to become the Gout hereafter if not timely prevented’. The Countess of Inchiquin must refer to Lady Orrery’s daughter Margaret Boyle, who married William O’Brien, second Earl of Inchiquin.¹²² After receiving advice from Dickinson, Lady Inchiquin sent the letter to her mother, who had it copied into her receipt book. The second letter in this volume, which contains a recipe for the gout, is dated fifteen years earlier on 16 April 1662 and is addressed to ‘the Right Honoble Roger Boyle Earl of Orrery’. It is signed by a ‘Christo: Davenport’, whose identity is unknown.¹²³ What is significant about these two letters is that they address illnesses suffered by the Earl and Countess of Orrery, and it is likely that the letters contained effective cures that the couple saved to be entered into their family receipt book at a later

¹²⁰ Wellcome Library, Western MS 1340, fols. 137r-v.

¹²¹ See *ODNB* entry for ‘Edmund Dickinson (1624-1707)’.

¹²² See *ODNB* entry for ‘Murrough O’Brien, first Earl of Inchiquin (c. 1614-1674)’.

¹²³ He is probably not the Franciscan friar of the same name, who was known by his religious name Sancta Clara by 1617. See *ODNB* entry for ‘Christopher Davenport (c.1595-1680)’.

date. Letters provided one method of exchanging recipes, which the recipient might later copy into his or her receipt book.¹²⁴ The fact that both of the letters named the Orrerys as recipients and patients suggests the book was compiled by members of this household who had access to letters that they received.

In addition to copying letters, the further attributions within this manuscript link it more with Lady Orrery than with Lady Ranelagh. The individual with the second highest number of recipes attributed to her is Lady or Countess of Orrery, totalling eight attributions.¹²⁵ There are also five to Lord or Earl of Orrery.¹²⁶ There are several references to members of the Boyle family, including three to Lady Warwick (Lady Orrery's sister-in-law Mary Rich), six to Lady Ranelagh and one to Lady Shaen (Frances Fitzgerald, daughter of George Fitzgerald and Joan Boyle, and therefore Lady Orrery's niece by marriage).¹²⁷ The reference to 'Spirit of Roses My Brother Robert Boyles Way', which has been used as the most convincing evidence that this book was written by Lady Ranelagh, could also have been written by Lady Orrery, as Robert Boyle was her brother-in-law.¹²⁸ Boyle himself called Lady Orrery 'the great support, ornament and comfort' of her family.¹²⁹ He also collected her medical recipes and referred to her as his 'sister' in his work diaries. One example may be found in his diary from 1655, when Boyle recorded the recipe 'To make <or increase> Rhenish Wine'. This recipe included both

¹²⁴ Royal College of Surgeons MS 0030, Elizabeth Isham MS recipes 1659[?], still has the original letter from which one of the recipes within was copied.

¹²⁵ See Wellcome Library, Western MS 1340, fols. 17r, 29r-v, and 40v-41v. The highest number of attributions is to a 'Mrs Seager', who may be a head servant in the Orrery household. Or, as most of the recipes attributed to Mrs Seager are lumped together, they may have been copied from a book once owned by a 'Mrs Seager'. See fols. 134v, 135r-136v.

¹²⁶ See Wellcome Library, Western MS 1340, fols. 5r, 8v, 30v, 137r.

¹²⁷ For Lady Warwick, see Wellcome Library, Western MS 1340, fols. 13r, 46r, 75r. For Lady Ranelagh, see fols. 3v, 6v, 35r, 37v. For Lady Shaen see fol. 37v.

¹²⁸ See Appendix E-3 for a copy of this recipe.

¹²⁹ Quoted in Kathleen M. Lynch, *Roger Boyle*, p. 33.

herbal and chymical ingredients, and he noted that he had received it from ‘My sister Broghill’, which was Lady Orrery’s title at the time.¹³⁰ As these examples suggest, contemporaries generally did not use the term ‘in-law’ when noting a source in their receipt books.

In addition to the Boyle family attributions, there are also some references to the Howard family (Lady Orrery’s family by birth) and even more to the Orrery family (her family by marriage). Lady Northumberland is credited with two medical recipes, probably referring to Lady Orrery’s sister, Elizabeth Howard.¹³¹ Two of Lady Orrery’s daughters are also mentioned: ‘Lady Powerscroft’ (the author of two recipes) must be Lady Orrery’s eldest daughter Elizabeth, and ‘Lady Kathern Brier’ (the author of one cookery recipe) is her third daughter Katherine Brett.¹³² Lady Essex is the source for one cookery recipe, and is probably Elizabeth Percy, fifth daughter to the Earl and Countess of Northumberland, and therefore niece to Lady Orrery.¹³³ ‘Lord Essex’ is also credited with having provided one recipe, and is probably her nephew Arthur Capel, with whom Lady Orrery was in frequent correspondence throughout the 1670s.¹³⁴ There are also references to a ‘Lady Southwell’, ‘Lady Barksher’ and ‘Lady Bedford’, three families

¹³⁰ Boyle’s *Work Diary* 12, 17 January 1655. From the online transcription

<http://www.livesandletters.ac.uk/wd/view/text_dip/WD12_dip.html> [Accessed 14 January 2009]

¹³¹ For attributions to Lady Northumberland, see Wellcome Library, Western MS 1340, fols. 27r & 34v. Elizabeth Howard (c.1608-1705) married Algernon Percy, 10th Earl of Northumberland, in 1642. See *ODNB* entry for ‘Algernon Percy, tenth earl of Northumberland (1602-1668)’.

¹³² For Lady Powerscourt, see Wellcome Library, Western MS 1340, fols. 28v-29r & 30r. Elizabeth Boyle married Folliott Wingfield, later Viscount Powerscourt, around 1662. See Lynch, *Roger Boyle*, p. 113. Lady Orrery’s daughter Katherine Boyle (1652–1681) married Captain Richard Brett of Richmond. Her recipe for cream cheese is on fol. 54v.

¹³³ See *ODNB* entry for ‘Arthur Capel, 1st Earl of Essex (c.1632-83)’. For attributions to Lady Essex, see Wellcome Library, Western MS 1340, fols. 66v-67r.

¹³⁴ See *ODNB* entry for ‘Arthur Capel, 1st Earl of Essex (c.1632-83)’. The recipe attribution to Lord Essex is on fol. 64v. For the correspondence between him and Lady Orrery, see BL Stowe MS 206 fols. 1, 15, 61, 107, 117 and BL Stowe MS 207, fols. 297 & 318.

that had connections to the Howards or Orrerys.¹³⁵ While Lady Ranelagh could have gained access to the Howard family's remedies via Lady Orrery, the multitude of Orrery family attributions and copied letters more naturally fit around Lady Orrery, suggesting she was the original compiler of this manuscript.

While the Wellcome catalogue is partly correct in saying that this manuscript originates with the 'Boyle Family', it is then incorrect in its hypothesis that the 'older hand' is possibly that of Lady Ranelagh. It would be more correct to catalogue this manuscript as 'Orrery Family' or 'Boyle and Orrery Family', as the emphasis on the Boyle family has led many scholars down an incorrect path of enquiry. The reference in this catalogue entry to Lady Ranelagh's hand should also be changed to that of Lady Orrery. While this correction may come as a disappointment to scholars interested in Lady Ranelagh, a correct understanding of this manuscript will open many new doors for future scholarship. For example, by instead placing Lady Orrery in the centre, there is evidence that the Boyle family recipes were exchanged throughout an even wider circle than was previously suspected. Yet for the purpose of this study, we must consider what Wellcome Library Western MS 1340 can tell us about Lady Ranelagh more specifically. Though she is not the author or compiler of this receipt book as a whole, one may study the individual recipes attributed to her to gain a clearer understanding of the types of medicine in which she was interested, and possibly even practised.

¹³⁵ Lady Southwell may be Elizabeth Southwell (née O'Brien), daughter of the First Earl and Countess of Inchiquin, making Lady Southwell granddaughter to Lady Orrery. Lady Berkshire may be Frances Harrison, wife of Thomas Howard, (later fourth Earl of Berkshire), who almost married Lord Orrery prior to his marriage with Lady Orrery in 1641. See Kathleen Lynch, *Roger Boyle*, pp. 28-29. Lady Bedford may be Anne Russell (née Carr), who was the daughter of Frances Carr, the divorced Countess of Essex, daughter of Thomas Howard, Earl of Suffolk. See G.E.C.'s *Complete Peerage*. Lady Southwell may be found on fol. 27r, Lady Berkshire on fol. 4r, and Lady Bedford on fol. 147r.

Lady Ranelagh's Recipes

In Wellcome Library Western MS 1340, Lady Ranelagh is named as the author of four recipes, the source for one recipe authored by Sir Kenelm Digby, and the witness who has 'approved good' one remedy authored by Lady Worcester. By analysing the ingredients and procedures in the recipes for which she is named author, we may see what type of recipes Lady Ranelagh circulated to her family and how they compare with the average seventeenth-century recipe, as identified by Elaine Leong's latest survey. These will also be compared with an overview of the other 700+ recipes in this volume to see how Lady Ranelagh's medical practice compares with that suggested by other members of Lady Orrery's circle.

The four recipes in this manuscript for which Lady Ranelagh is given as author are all medical remedies, suggesting that her interest in collecting and distributing recipes related predominantly to those that were medical. There is little overlap of ingredients between the four recipes, which are based on approximately 20 plant-based items, most of which might be easily found or grown in one's own garden (such as agrimony, sea scurvy grass and sage).¹³⁶ There are however other items, such as the spices cinnamon and nutmeg, which had to be imported or purchased from an apothecary.¹³⁷ One recipe also includes the exotic plants chinaroot and sarsaparilla, first imported into England in the 1580s.¹³⁸ Significantly, none of these four recipes includes any chemical compounds,

¹³⁶ All three of these held medicinal properties and were included in contemporary printed herbals.

¹³⁷ Elaine Leong, 'Medical Recipe Collections', p. 103.

¹³⁸ Wellcome Library, Western MS 1340, fol. 6v. On the import of these exotics, Wear, *Knowledge & Practice*, p. 71.

metals or minerals. This is substantially different from those included in Sloane MS 1367, most of which did include such ingredients — a topic to which I will return later in this section.

While the ingredients appear to be a standard range of herbs, including plants commonly suggested by contemporary printed herbals, an analysis of the procedures used to produce the medicines offers a far broader range of methods, including both extremes of the contemporary medical spectrum. The most common methods and equipment used in the seventeenth century may be found in these recipes, including bruising herbs in a mortar, steeping ingredients in an earthen pot, or infusing them in hot water. However, some rarer methods are also employed. One recipe ‘Against the Scurvy’ requires that one ‘Distill these [herbs and spices] in 3 Gallons of Milk in a Rose Still over a Gentle fire’.¹³⁹ Elaine Leong has recently shown that the terms ‘still’ and ‘distill’ were used by both male and female recipe book compilers, but that these recipes were still a minority in the seventeenth century. Furthermore, she has shown that specific reference to distillation equipment, as seen here with the reference to a rose still, was found in a very small minority of recipes: only between 0.1 - 2.2%.¹⁴⁰ This shows that Lady Ranelagh recommended the use of sophisticated techniques that required specialised equipment. However, on quite the other extreme, one of her recipes ‘For the Falling Sickness and Good for Convulsion Fitts’ has references to folk magic and astrological influences.¹⁴¹ After listing many herbal ingredients which must be powdered and simmered over a fire, the recipe says that one should ‘give the party a quarter of a pint in the morning and as much in the Evening to drink at the full and at the change of the Moon’. It then concludes

¹³⁹ Wellcome Library, Western MS 1340, fol. 3v.

¹⁴⁰ Elaine Leong, ‘Medical Recipe Collections’, p. 107.

¹⁴¹ Wellcome Library, Western MS 1340, fol. 37v.

with ‘You must withall grate about an ounce of the peony root and put it into a new Lockram bay and let the party wear it about their Neck 6 months together.’ Lockram was a type of linnen fabric which was used by some to hold a medical charm, as suggested by Gervase Markham in his *The English Housewife*.¹⁴² The contrast of these recipes shows the broad range of Lady Ranelagh’s medical practice, whereby she incorporated expensive new technologies into established household knowledge of herbs and folk tradition with no distinction between the methods.

This small sample appears similar to the composition of this receipt book as a whole. Wellcome Library Western MS 1340 contains 712 numbered recipes that are primarily medical, but occasionally are also related to cookery and household tasks such as making ink. In his analysis of this manuscript, Andrew Wear concluded that ‘All types of medicine are present here without distinction’.¹⁴³ The same may be said of those recipes authored by Lady Ranelagh. In this respect, Lady Ranelagh’s knowledge of medicine appears similar to that held by other members of Lady Orrery’s circle. While her use of distillation equipment places her in a very small minority of contemporary lay practitioners, this equipment was only recommended in one of her recipes.

The recipe ‘For Sore Eyes’, attributed to Lady Worcester but ‘approved good [by] Lady Ranelagh’, might offer some information as to the type of medicine Lady Ranelagh actually practised. While not all recipes in receipt books were used, there are often indications of use for some of the individual recipes, including amendments to quantities and ingredients or notes on efficacy, such as the aforementioned phrase. The key ingredients in this recipe are the plant-based products eyebright (the herb euphrasy),

¹⁴² See *OED* entry for ‘lockram’. Gervase Markham, *The English Housewife* (London 1615, repr. 1631), p. 54.

¹⁴³ Andrew Wear, ‘Popularization of Medicine’, p. 35.

celandine, white rose leaves, agrimony and red fennell, which are all mixed with white wine.¹⁴⁴ Forty swallows should then be beaten and added to the mixture, ‘feathers and all’. The practitioner is instructed to ‘put them [the mixture of ingredients] into a still and distill them with a soft fire’, adding one ounce of ‘Aloes Succotrine’ (which is either the drug compound *socotrine aloes* or the plant yielding the drug).¹⁴⁵ Recipes that required a large number of swallows to later be distilled were popular in seventeenth-century receipt books.¹⁴⁶ While the process of catching 40 swallows would not have been easy, some of these recipes addressed this problem and offered advice on catching the swallows or using alternative ingredients. For example, BL Sloane MS 1367 has a recipe for ‘The Swallow water’ which begins with ‘Take 40. or 50. swallows when they are ready to flye from theyr nests, bruise them to palp in a mortar with feathers & all’.¹⁴⁷ The recipe concludes with the advice ‘If you cannot get so many swallows as are prescribed, then take such as you have, set them in any oven & half drye them, this way you may keep them 4 or 5 days, then mix them with such others, as you shall get in ye mean time. About midsummer is ye best time for ye young Swallows are ready to flye’. Therefore, this recipe in the Wellcome receipt book that was ‘approved good [by] Lady Ranelagh’ could provide evidence of her having used a recipe that was an interesting application of new chymical methods to old herbal and animal-based ingredients.

The final recipe associated with Lady Ranelagh is ‘Sr Kenelm Digby’s Cordiall’, for which Lady Ranelagh is given as the source.¹⁴⁸ This recipe also has a range of

¹⁴⁴ See *OED* entries for ‘eyebright’. This recipe is Wellcome Library, Western MS 1340, fol. 42v.

¹⁴⁵ See *OED* for ‘socotrine’.

¹⁴⁶ Rebecca Laroche and I are currently conducting a case study of this recipe, which will be published as an article tentatively entitled ‘On the “Oil of Swallows”: Women’s Material Practice of Medicine and the Reliability of the Historical Record’.

¹⁴⁷ BL Sloane MS 1367, fols. 4v-5r.

¹⁴⁸ Wellcome Library, Western MS 1340, fol. 35r.

ingredients, ranging from ‘the black of crabs claws’ to ‘Oriental Bezoar Stone’ to ‘Extract of English Saffron’, demonstrating his interest in exotics.¹⁴⁹ Though this remedy originates with Kenelm Digby (1603-1665), a well known supporter of chymical medicine who was one of twelve original Fellows elected to the Royal Society in 1662, this remedy does not include complicated chymical procedures or compound ingredients, showing that even the greatest proponents of the new chymistry still recommended traditional methods, as well.

Finally, these two sources linked to Lady Ranelagh in this manuscript complement the earlier discussion of her medical network. Her distribution of Kenelm Digby’s remedies adds further support to the argument that these two maintained a professional relationship.¹⁵⁰ The reference to Lady Worcester, however, is a new connection, and probably refers to Margaret Herbert (née O’Brien), second wife of Edward Somerset, second marquess of Worcester.¹⁵¹ The Worcesters were staunch Royalists throughout the Civil Wars and were active in the courts of both Charles I and Charles II. This adds another Royalist dimension to Lady Ranelagh’s diverse medical network, as well as adding another elite woman to her circle which currently has few women of this standing.

Overall, the recipes authored, witnessed and distributed by Lady Ranelagh as recorded in this manuscript demonstrate that she recommended, used and collected a

¹⁴⁹ Bezoar Stone referred to a stone found in an animal’s liver or stomach which was used as an antidote. See *OED* for ‘Bezoar Stone’.

¹⁵⁰ Lady Ranelagh also distributed to the Hartlib Circle ‘Sir Kenelme Digbyes secret’, which exists in a copy from a letter she wrote on 11 September 1658. See HP 66/8/1A-B. This manuscript has also been copied by James Tyrrell in Wellcome Western MS 4887, one of few things that he copied in his highly selective transcription of the Hartlib Papers.

¹⁵¹ Worcester’s first wife, Elizabeth, died in 1635, which seems too early a date for Lady Ranelagh to have known her and for inclusion as a source in this manuscript. He married his second wife, Margaret, in 1639 and she died in 1681. See *ODNB* entry for ‘Edward Somerset, second marquess of Worcester (d.1667)’.

wide range of medical recipes, mixing chymical procedures with traditional herbal ingredients without distinguishing between the two methods. However, it is worth noting that the range of remedies associated with Lady Ranelagh in Wellcome Western MS 1340 are, when viewed as a whole, different from the collection of recipes presented in BL Sloane MS 1367, as the latter consists of mostly chymical recipes and employs alchemical cipher. There are several possible reasons for this difference, but the answer may rest as much with the compilation practices of the author as well as the interests and needs of the recipient. It appears that Wellcome Library Western MS 1340 is a family receipt book, compiled with the intention of practical use — an encyclopedic collection to which one could turn for help when ill. BL Sloane MS 1367, on the other hand, appears to be a collection of chymical experiments compiled to display knowledge of and experience in the latest trends in iatrochymistry — more of a ‘cabinet of curiosities’, or maybe even an ‘experimental scientific notebook’, than a practical source of help. The recipes in the Orrery manuscript are probably more practical because Lady Orrery would have asked her sister-in-law for a useful remedy for a particular ailment. The Orrery family receipt book appears to have been compiled for the sake of practical medical benefit, as opposed to Lady Ranelagh’s chymical receipt book which was compiled with the intention of displaying rarities and fostering chymical experimentation.

To summarise, Wellcome Western MS 1340 was not compiled by Lady Ranelagh and is not written in her hand, and so the only way in which it aids this study is for us to analyse the individual recipes to which her name is attached. Because we know from their extant letters that Lady Orrery and Lady Ranelagh were in frequent correspondence on medical matters, it may be that the former shared with Lady Ranelagh some of the

recipes within this volume. Though this manuscript is similar to BL Sloane MS 1367 in that both receipt books use Lady Ranelagh's name as a source of authority even though neither is actually written in her hand, this chapter has suggested that the two must be read in a different manner based on the bibliographic information gathered from the material object. The final section will consider the last receipt book associated with Lady Ranelagh, and the one which has received the least attention of all: Royal Society Library MS RB/2/8.

Royal Society Library MS RB/2/8

The Royal Society Library holds a 96 page receipt book catalogued as RB/2/8 (previously Royal Society Library MS 41), which is described as a 'Medical commonplace book used by [Robert] Boyle and Lady Ranelagh, 1658-1678'.¹⁵² The manuscript is a small octavo that is bound sideways, making it much wider than it is tall. The first five and the final folios are written parallel to the spine, suggesting that the book may have originally been bound the opposite way.¹⁵³ The dating of the text has been based on the earliest and latest dated recipes within, though the latest dated recipe is actually one by Dr Cox dated 15 April 1681.¹⁵⁴ Unlike the other two receipt books associated with Lady Ranelagh, there is no attempt at cohesive organisation (evidenced by a lack of pagination, numeration of recipes and indexing scheme), resulting in its more accurate classification as 'medical commonplace book' than as 'receipt book'. The

¹⁵² Royal Society Library, RB/2/8 (previously RS MS/41). The Royal Society, Library and Archive Catalogue <<http://royalsociety.org>> [Accessed 20 July 2008]

¹⁵³ Royal Society Library, RB/2/8 fols. 2-6, 93v. The manuscript has been rebaked by the Royal Society.

¹⁵⁴ Royal Society Library, RB/2/8, fol. 90v. The earliest date is on fol. 3v. The later date of composition has been noted by Michael Hunter in *The Boyle Papers, Understanding the Manuscripts of Robert Boyle* (Aldershot: Ashgate, 2007), p. 516.

recipes within are mostly in English but there are also some in Latin. These recipes are written in at least ten different hands, which have been identified in a guide to the manuscripts of Robert Boyle.¹⁵⁵ Michael Hunter provided a description of the manuscript, where he explained, ‘Some of the material is in the hand of Lady Ranelagh, who evidently initially shared the book with Boyle; other entries are by several of Boyle’s amanuenses’.¹⁵⁶ This description suggests that Boyle and Lady Ranelagh compiled this book together over more than twenty years, and that it might thereby offer detailed information about their collaborative medical practice.¹⁵⁷

The link to Lady Ranelagh is based entirely on a study of the hand. Lady Ranelagh’s name is not listed anywhere in this manuscript and not a single recipe is attributed to her. However, it has been argued that 24 folios are written in her hand, most of which may be found at the beginning of the manuscript.¹⁵⁸ Because this manuscript’s attribution to Lady Ranelagh is based entirely on a study of her handwriting, it is essential to revisit the link between the two hands. To do this, I have compared the folios in RB/2/8 attributed to Lady Ranelagh with a series of roughly 50 letters written over the time period when the manuscript was compiled, 1658-81, as well as to her ‘Discourse Concerning the Plague’, written around 1666 and also held in the Royal Society Library.¹⁵⁹

¹⁵⁵ See Michael Hunter, *Letters and Papers of Robert Boyle: A Guide to the Manuscripts and Microfilm* (Bethesda, MD: University Publications of America, 1992), p. 73 and the recently revised version, Michael Hunter, *Boyle Papers*, p. 516.

¹⁵⁶ Hunter, *Boyle Papers*, p. 516.

¹⁵⁷ From some point in the 1650s onwards, Boyle rarely wrote in his own hand. See Hunter, *Boyle Papers*, pp. 46-47.

¹⁵⁸ Royal Society Library, RB/2/8, fols. 3-6, 7-12, 13v-17, 18v, 20-22, 23, 33-35, 76. See Hunter, *Boyle Papers*, p. 516.

¹⁵⁹ The letters are those held in the British Library, Yale University Beinecke Library, and West Sussex Record Office, all of which have been previously mentioned and are detailed in the bibliography. The

There are several similarities between these two italic hands, but there are also many significant differences. Throughout these decades, Lady Ranelagh always used a tall ascender on her miniscule ‘p’ and usually used a long ‘s’, particularly when words began with this letter. Neither of these characteristics may be found in this medical commonplace book. Likewise, there are some unique letter formations in this hand that are dissimilar to Lady Ranelagh’s hand. For example, this anonymous person has a distinctive miniscule ‘e’, which is sometimes formed as a majuscule ‘E’ but smaller, or is half-formed with an unconnected dash on top.¹⁶⁰ The writer also has a unique majuscule ‘B’ (where the bottom of the ‘B’ is not connected), majuscule ‘R’ (which is similar to the ‘B’ in that there is a loop on the bottom left leg), and majuscule ‘T’ (which is very basic and does not connect to the following letter). These practices are not found in any of Lady Ranelagh’s letters.¹⁶¹

Therefore, while the hands are similar, I would argue that RB/2/8 is not written in Lady Ranelagh’s hand. Though the two are indeed similar, the link between the two is not convincing enough to allow for an authoritative reading of Lady Ranelagh’s involvement in compiling this text. Instead, it might be that this hand is that of another of Boyle’s amanuenses, suggesting that the book was compiled by Boyle over the years, with his various scribes and assistants writing in this manuscript the medical recipes that he collected.¹⁶² Instead of a collaborative effort between the siblings, this manuscript might instead demonstrate Boyle’s medical compilation practices over two decades. If

‘Discourse Concerning the Plague’ is RB/1/14/4 (previously Boyle Papers 14), fols. 27-42. It bears a contemporary note that says ‘The hand Lady Ranelagh & I believe the composition too’, found on fol. 42v.

¹⁶⁰ See Appendix E-7, which has Royal Society Library, RB/2/8, fols. 7v.

¹⁶¹ To compare this writer’s unique letters with Lady Ranelagh’s, see any letter in Appendix C for her miniscule ‘e’, Appendix C-2 for her majuscule ‘T’ and majuscule ‘B’, and Appendix C-1 for her majuscule ‘R’.

¹⁶² On the various hands of Boyle’s amanuenses throughout the decades, see Hunter, *Boyle Papers*, pp. 47-56.

this is the case, and the hand is not Lady Ranelagh's, then no internal evidence links her to this manuscript. Because of the very dubious identification of this hand as Lady Ranelagh's, I am not considering this manuscript to be one of her receipt books, and so will not offer any further analysis of it here.

Conclusion

A material reading of the three receipt books associated with Lady Ranelagh suggested that none of these three texts is actually written in her hand, and that therefore further study was required to determine how she is, or is not, related to each manuscript. Such a reading revealed that her relationship to each text is quite different, and that each required a different methodological approach. For example, BL Sloane MS 1367 named her as the author of the volume, which meant it required a different reading from Wellcome Library Western MS 1340, which was compiled by Lady Orrery but included some individual recipes attributed to Lady Ranelagh. By applying a sensitive reading to each manuscript, we gain a clearer sense of Lady Ranelagh's diverse medical interests as well as a glimpse into the wide circle of correspondents which she appears to have maintained. This new understanding would be strengthened if it were contextualised through an analysis of her extant letters, many of which discussed medicine. The next chapter will consider her practice of medicine and her diverse medical network as revealed in her letters, with the goal of discovering how far the information complements or contradicts the picture offered by the receipt books.

Chapter 5: Medical Knowledge, Networks and Authority in Lady Ranelagh's Letters

The medical field in seventeenth-century England was a diverse world filled with competing theories endorsed by a varied range of practitioners. Though differences in the profession were shaped by geography and time, the overall structure of the profession in seventeenth-century London — the context of this chapter — may be summarised as a hierarchical three-tier system. At the top were physicians, who were organised as the College of Physicians (later Royal College of Physicians, after the Restoration); they held university qualifications and endorsed traditional Galenic medicine based on classical Latin texts. The second tier comprised surgeons, who were regulated by the Barber-Surgeons' Company; they were responsible for many demanding and dangerous procedures, including amputations and bone-setting. Finally there were apothecaries, who only became institutionalised as the Society of Apothecaries in 1617; they prepared and dispensed medications prescribed by doctors and sold some compounds and ingredients directly to patients.¹

Yet many people working for profit or for charity, both male and female, operated outside of this formal system. Throughout the seventeenth century the College of Physicians was forced to adopt increasingly defensive strategies to preserve its monopoly, as many 'empirics' or 'irregulars' (as unlicensed practitioners were called) were

¹ Margaret Pelling, *Medical Conflicts in Early Modern London: Patronage, Physicians, and Irregular Practitioners, 1550-1640* (Oxford: Oxford University Press, 2003); Lisa Forman Cody 'Introductory Note', in *Writings on Medicine: The Early Modern Englishwoman Series 2*, Vol. 4 (Aldershot, Hants: Ashgate, 2002), pp. ix-xviii.

promoting chemical or herbal household medicines as alternatives to the traditional, expensive practice endorsed by the College; they claimed the latter was based on reading and not experience.² While women were almost entirely excluded from the professional three-tier system, they did practise a wide variety of medicines. As many as 110 London women were pursued by the College of Physicians for ‘irregular practice’ between 1550 and 1640, and these were only the most extreme cases, and generally did not include gentlewomen practicing ‘physic’ in their households and communities.³ Margaret Pelling has argued that while these women had various levels of knowledge and experience, they all shared one thing: ‘they charged fees and were paid. It is the male irregulars, in fact, who were more likely to claim that they practised out of charity or only among their family and friends’.⁴

Midwifery was another branch of professional medicine, which remained a female-dominated field throughout the seventeenth century.⁵ Though midwives tried to have themselves recognised as an independent society in both 1616 and 1634, neither proposal was successful and they remained outside the professional three-tier structure. Instead, women obtained a midwifery licence from bishops (who also used to grant licences to physicians, surgeons and apothecaries before they became self-governing societies) and had to provide witnesses attesting to their proficiency.⁶ Doreen Evenden

² Margaret Pelling, ‘Compromised by Gender: The Role of the Male Medical Practitioner in Early Modern England’, in *The Task of Healing: Medicine, Religion and Gender in England and the Netherlands 1450-1800*, ed. Hilary Marland and Margaret Pelling (Rotterdam: Erasmus Publishing, 1996), pp. 101-33.

³ Pelling, *Medical Conflicts*, pp. 81, 189-90, 194-95. Pelling says this number means that women comprised 15.4% of the irregular practitioners prosecuted by the College over these ninety years. She estimates that this is probably, at most, one-third of women practising medicine as an occupation in London at this time.

⁴ Pelling, *Medical Conflicts*, p. 203.

⁵ Doreen Evenden, *The Midwives of Seventeenth-Century London* (Cambridge: Cambridge University Press, 2000).

⁶ Elaine Hobby, *Virtue of Necessity: English Women's Writing 1649-88* (London: Virago, 1988), pp. 183-84. Bishops could still license physicians in the provinces, but not in London.

conducted a socio-economic study of seventy-six midwives in twelve London parishes to show that most licensed seventeenth-century London midwives were probably 'women who were married to men of the more affluent professional (including gentry), or official or entrepreneurial (including merchants) segments of society'.⁷

Yet many other women also knew about and practised medicine. A basic knowledge of medicine was expected of an elite woman once she was married and was managing a household. In particular, gentlewomen were expected to make medicines in their homes and to administer them to their families and to the poor in their communities. The number of receipt books and medicine-related diaries compiled and owned by gentlewomen attests to this having been no small enterprise. Many historians of medicine have explained that while the woman of the house may have been the first port of call for minor illnesses, a licensed physician or surgeon was called for more serious treatments.⁸ As Elaine Leong and Sara Pennell explain, 'The decision to call on the services of a physician, surgeon, apothecary or other forms of paid medical practice, usually followed the failure of domestic treatment to cure or alleviate conditions'.⁹

Lady Ranelagh's extant letters challenge this model in many ways, by evidencing her diverse medical network, comprising family, friends, and medical professionals. She treated her immediate and extended family, but was also called in to treat sick friends and even members of the royal family. Her letters provide evidence of a fluid movement of medical knowledge where she learned from doctors, but they also learned from her.

⁷ Evenden, *Midwives*, p. 168.

⁸ Linda Pollock, *With Faith and Physic: The Life of a Tudor Gentlewoman, Lady Grace Mildmay 1552-1620* (Collins & Brown: London, 1993); Andrew Wear, *Knowledge & Practice in English Medicine, 1550-1680* (Cambridge: Cambridge University Press, 2000); Jennifer Stine, 'Opening Closets: The Discovery of Household Medicine in Early Modern England' (unpublished doctoral thesis, Stanford University, 1996).

⁹ Elaine Leong and Sara Pennell, 'Recipe Collections and the Currency of Medical Knowledge in the Early Modern "Medical Marketplace"', in *Medicine and the Market in England and Its Colonies, c. 1450-c.1850* ed. by Mark S. R. Jenner and Patrick Wallis (London: Palgrave, 2007), pp. 133-52 (p. 134).

Though she never received payment for her services, the medical situations described in Lady Ranelagh's letters make her experience and understanding of medicine sound more like that of a physician than a gentlewoman.

This chapter is divided into three parts. The first section will discuss what types of medicine Lady Ranelagh knew, endorsed and practised, as shown by her letters and the extant recipes to which her name is attached. I will show that Lady Ranelagh's medical practice conflated Galenic and chemical theories, and that her knowledge of the causes of illnesses and her interest in corporeal deformities suggest that she had a greater understanding of medicine than most aristocratic women. In the second part, I will recreate her medical network, showing that she not only cared for her household and extended family, but also helped her friends by liaising with doctors. Throughout the course of her life, she maintained relationships with the most respected doctors and consulted a range of international correspondents of varying credentials, enabling her to secure the most comprehensive diagnoses and best treatment plans for the patients she was treating. The final section will consider how Lady Ranelagh used the letter-writing genre to subtly subvert the conventional order by critiquing the practice and ethics of most physicians. Her firm belief that health and illness were acts of God's providence, and her confidence in her own piety and commitment to God, gave her the strength to act in a manner unconventional for most gentlewomen while simultaneously allowing her to maintain the respect of the authorities she challenged. I will suggest that we know so little about women's medical authority in seventeenth-century England because most research on women's medical writings has been on printed texts, and I will use the example of

Lady Ranelagh's letters to suggest a new direction for studies on women's self-presentation as medical authorities.

Lady Ranelagh's Medical Knowledge

Medicine was part of an early modern Englishwoman's domestic duties, and we now know of many gentlewomen who made and administered their own medicines, performed minor surgical operations, and assisted with childbirth.¹⁰ For example, the diaries of Lady Mary Rich (1624-78), Lady Margaret Hoby (1571-1633) and Elizabeth Isham (1609-54), demonstrate the wide range of medical treatments for which women were responsible in early modern England.¹¹ Though Lady Ranelagh left no diary or medical receipt book written in her own hand, her exceptional medical knowledge may be gauged from her letters, from the extant recipes which are attributed to her, and from the numerous laudatory comments about her by contemporaries.

The catholic assortment of recipes that Lady Ranelagh endorsed is characteristic of how contemporaries incorporated into their personal practice the competing medical systems of seventeenth-century England, as well as revealing the diverse sources from which she must have gained her knowledge. For example, the previous chapter on receipt books showed that BL Sloane MS 1367, a copy of a manuscript compiled by Lady Ranelagh, was filled with alchemical cipher and had a title page that presented her as a chymical authority. This was contrasted with the recipes attributed to her in Lady

¹⁰ Pollock, *With Faith and Physick*, pp. 97-98

¹¹ Mary Rich, BL Add. MSS 27351-56; Margaret Hoby, *The Private Life of an Elizabethan Lady: The Diary of Lady Margaret Hoby, 1599-1605*, ed. Joanna Moody (Stroud, Gloucestershire: Sutton, 1998). For Elizabeth Isham's diary, see 'Constructing Elizabeth Isham', <<http://www2.warwick.ac.uk/fac/arts/ren/projects/isham/>> and the accompanying article, Michelle DiMeo and Rebecca Laroche, 'Elizabeth Isham and Medicine', <<http://www2.warwick.ac.uk/fac/arts/ren/projects/isham/medicine/>> [Accessed 29 January 2008].

Orrery's receipt book, Wellcome Library Western MS 1340, most of which relied on primarily plant-based ingredients. The same mixture of 'new' and 'old' medicine may be found in her letters. Her open-minded approach to medicine may have been partly informed by her belief that God had hidden many secrets in nature, which meant that a simple herb could be more effective than the latest complicated chymical procedure. In a letter she wrote to Samuel Hartlib on 13 March 1658, after telling him of the benefits of a 'distilled water of Arsmart or Lake-Weed', Lady Ranelagh explains, 'who know's but God may have chosen some such base thing to doe that wch all your great præscriptions have not beene able to effect'.¹² Lady Ranelagh's religious beliefs created a context for her to explore diverse medical interests; her belief that God hid secrets in nature led her to try medicines that ranged from chemical to herbal, from Galenic to experimental.

One source from which we may gain an understanding of Lady Ranelagh's early medical knowledge is the Hartlib Papers. In Samuel Hartlib's 'Ephemerides' of 1648-59, Lady Ranelagh's name is attached to twenty-one medical recipes, which include those that she developed herself, tested, or received from other practitioners. Hartlib collected a large number of recipes and curiosities on various subjects, which he copied onto paper scraps, circulated to other members of the Circle, and collected in his diary, the 'Ephemerides'. Yet while Hartlib collected recipes for everything from foodstuffs to perfumes, it is significant that all but two of the recipes listed in the archive to which Lady Ranelagh's name is attached are for medical cures, demonstrating that her interest

¹² HP 60/4/20B, Extract from Lady Ranelagh's letter from Lismore, 13 March 1658. Recipes for Stone, Mr Maltus & Lady Ranelagh In Hartlib's Hand. Arsmart and Lake-weed were both names used for the plant Water-pepper (*Polygonum hydropiper*) which was recommended by many contemporary herbals. See *OED*.

in collecting recipes was focussed predominantly on those that were medical.¹³ Like the varied recipes to which her name is attributed in BL Sloane MS 1367 and Wellcome Library Western MS 1340, the ‘Ephemerides’ show that she was practising herbal and chemical medicines which originated from people of varying credentials.

In 1649 and 1650, Lady Ranelagh was experimenting with two of the most popular recipes of the day: the Countess of Kent’s Powder and Lucatella’s Balsam.¹⁴ The Countess of Kent’s Powder was a cordial powder made from a long list of exotic ingredients such as crab’s eyes, amber, red coral and pearls.¹⁵ Lucatella’s Balsam comprised primarily herbal ingredients, including venice turpentine, *sanguis draconis*, red sanders and St. John’s wort, which must be distilled multiple times to produce a chemical compound suitable for use.¹⁶ These popular recipes are recorded in many seventeenth-century receipt books, but the rare, expensive ingredients for the Countess of Kent’s Powder and the complicated, time-consuming distillation procedure for Lucatella’s Balsam may suggest that people collected these recipes for their novelty value, and not for practical purposes. However, the context offered in the Hartlib Papers suggests that Lady Ranelagh was not merely collecting the remedies, but was testing them, too. For example, in his ‘Ephemerides’ for 1650 Hartlib includes the note ‘Lucstellus Balsam inwardly taken or back anoited the urine will smel of it, wch shew's

¹³ The exceptions are her recipe for a pomander of violets in HP 28/1/54A, ‘Ephemerides’ 1650 and a recipe for ale which she promises to get from ‘Waller the witt’ in HP 29/8/9A, ‘Ephemerides’ 1659. ‘Waller the wit’ is probably the poet Edmund Waller, who was a friend of the Boyle family. For more on her friendship with Waller, see Letter, Lady Ranelagh to Robert Boyle, 7 January [1657], in *Correspondence of Boyle*, I, pp. 208-210.

¹⁴ For the Countess of Kent’s Powder, see HP 28/1/32B, ‘Ephemerides’ 1649. For Lucatella’s Balsam, see HP 28/1/83A-B, ‘Ephemerides’ 1650 and HP 28/1/50B ‘Ephemerides’ 1650, Part 2. Lucatella’s Balsam is recipe numbers 3 and 166 in BL Sloane MS 1367, both of which are in sections of the manuscript attributed to Lady Ranelagh (and not to Thomas Willis).

¹⁵ For the full recipe, see *The Queens Closet Opened* (London, 1659), p. 274.

¹⁶ For the full recipe, see BL Sloane MS 1367, fols. 2v-3r.

it's penetrating vertue and therfr good for any aches in the back and ag[ain]st Gravel of the stone. Lady Ranal[agh]'.¹⁷ This note includes Lady Ranelagh's comments regarding the effects of applying this remedy, suggesting that she was experimenting with these medications and recording her observations so that she could share her notes with friends.

While she tested popular, exotic recipes that originated from elite practitioners, Lady Ranelagh also experimented with recipes of lesser repute. In 1650 Hartlib began a quest to gain more information on a recipe called the 'Maid's Physick', which he had learned of through John Dury. The recipe's title suggests that it may have originated with a chamber maid, or other female household servant. Though Hartlib thought it was probably little more than 'some specific herb drunk in white wine', he noted that Dury will give the recipe to John Sadler, who will 'make trial of it'. He then added, 'Also my Lady Ranalagh and Mris Dury are doing the like'.¹⁸ It is unclear by his wording whether Hartlib means that Lady Ranelagh and Dorothy Moore were using the Maid's Physic together, or both individually, but it does show Lady Ranelagh's interest in testing new herbal household remedies.¹⁹ Further examples of her using herbal simples are offered in later editions of the 'Ephemerides'. In Hartlib's 1654 'Ephemerides', he noted that 'Walnut-honey (or the rindes of Walnut) is a most excellent and soveraigne Remedy against a sore throat. My Lady Ranalagh hath store of it'.²⁰ By explaining that Lady Ranelagh 'hath store of it', we may deduce that Lady Ranelagh prepared this simple (made by mixing crushed walnuts with honey) in bulk — a common practice since many

¹⁷ HP 28/1/83A-B, 'Ephemerides' 1650.

¹⁸ HP 28/1/59A, 'Ephemerides' 1650, Part 2.

¹⁹ For more on Dorothy Moore's relationship with Lady Ranelagh, see above Chapters 1 and 2. However, it should be noted that 'Maids Physick' could also mean that the recipe was intended for a 'maid', or young woman.

²⁰ HP 29/4/14B, 'Ephemerides' 1654, Part 2.

recipes required the use of seasonal ingredients. Toward the end of 1655, Hartlib records that ‘Lady Ranelagh can witnes a kind of miraculous cure wrought by laudanum given unto a child upon the point of death’.²¹ Hartlib’s phrase ‘can witnes’ is slightly ambiguous, but probably means that she both ‘[has] witnes[sed]’ the cure and ‘can’ testify to its effectiveness. Laudanum was a name for opium, a herb used to mitigate violent pains which was administered in the form of a tincture or pill that would not require chemical procedures.²² Finally, her interest in herbal medicine is documented further in a story she told Hartlib about having witnessed a German man instantly cure a woman of consumption by administering a purely herbal remedy.²³

In addition to herbal remedies and household simples, the ‘Ephemerides’ also suggest that Lady Ranelagh borrowed from old folk traditions. In 1653, she attests to having seen a woman who was suffering from ‘the Piles in child-bearing’ cured instantly when she sat on a roasted onion.²⁴ Because of its pungency and strong taste, folk traditions have deemed onions the source of various medical cures — their mere presence was generally thought to promote good health.²⁵ One year later in 1654, Hartlib records that Lady Ranelagh suggests that one should collect ‘Star-fal’ (‘a kind of dew which is gathered in March and April’) to cure the worms.²⁶ The healing properties of dew have survived into twentieth-century folk traditions worldwide, with various interpretations of

²¹ HP 29/5/46B, ‘Ephemerides’ 1655, Part 4.

²² ‘The “Cecil” Glossary of *Materia Medica* and Medical Terminology’. The Health of the Cecils (c.1550 - c.1660). Royal Holloway, University of London, Department of History.

<<http://www.rhul.ac.uk/History/Research/cecils/medica/>> [Accessed 15 November 2007]

²³ HP 31/22/35A, ‘Ephemerides’ 1648, Part 3.

²⁴ HP 28/2/82A, ‘Ephemerides’ 1653.

²⁵ David Pickering, *The Cassell Dictionary of Folklore* (London: Cassell, 1999), p. 220.

²⁶ HP 29/4/6B, ‘Ephemerides’ 1654.

the best place, and the best time of year, to collect it.²⁷ In Hartlib's 1655 'Ephemerides', he records that 'Starshot gathered by herbe or snake women in February etc. an admirable cure if it bee laid to wens swellings etc. etc to the throat. Much tried by my Lady Ranelagh'.²⁸ Though the meaning of 'snake woman' in the seventeenth century is unclear, the term may hold magical connotations.

Lady Ranelagh's knowledge and use of various types of medical remedies can be found together in a single example: a series of extracts which Hartlib took from 'My Lady Ranalaughs letter from Lismore'.²⁹ The folio begins with Lady Ranelagh offering a short note that explains her sources for the three enclosed recipes, saying she experienced one herself for 'sharepe hott humors', received another from Sir Kenelm Digby, who had a good experience with it, and that the final recipe was also recommended to her, though she does not identify a source. The accompanying note also gives evidence of Lady Ranelagh's actual experimentation with at least two of these recipes. The recipe for 'A Cold poltis', which she says she used to counter 'sharepe hott humors', is a simple remedy combining the readily available household items eggs, honey and wheat flour. However, the other two recipes that were recommended to Lady Ranelagh, 'Sir Kenelme Digbyes secret' and 'For St Anthonys Fire', both involve complicated processes of distillation and chemical ingredients such as '*aqua Calcis*' and '*Unguentum Album Camfired*'.³⁰ As with Hartlib's 'Ephemerides' as a whole, there is never perceived a

²⁷ Wayland D. Hand, *Magic Medicine: The Folkloric Component of Medicine in the Folk Belief, Custom and Ritual of the Peoples of Europe and America* (Berkeley and Los Angeles: University of California Press, 1980), pp. 298-99.

²⁸ HP 29/5/19A-B 'Ephemerides' 1655, Part 2.

²⁹ HP 66/8/1A-2B, Extract & Recipes in Scribal Hands ? & ?, Lady Ranelagh and Kenelm Digby, 11 Sept 1658.

³⁰ *Aqua calcis* is another name for 'lime water', a saturated solution of calcium hydroxide in water. '*Unguentum Album Camfired*' is a white ointment made from camphor, an organic chemical compound

need to distinguish between various methods or to apologise for presenting them together, confirming that herbal and chemical medicine co-existed harmoniously in the homes of many seventeenth-century medical practitioners.

While the Hartlib Papers contain most of Lady Ranelagh's extant medical letters written throughout the 1640s and 1650s, medicine remains a focal subject in many of her letters to friends and family members after the Restoration. Because these later letters survive in their entirety and not as fragments, they sometimes offer more contextual information than those in the Hartlib Papers. For example, while most of Hartlib's extracts from Lady Ranelagh's letters contained only the medical recipe, the Restoration letters sometimes include Lady Ranelagh's reflections on the causes of an illness, offering a clearer idea of her complicated medical philosophy. The letters are also useful because while the individual recipes and receipt books associated with her can offer details on the type of medicine in which she was interested and possibly practised, they do not offer information about her understanding of the causes of illnesses or her theories behind certain treatments. This is typical of most seventeenth-century receipt books, regardless of the author's gender, which is why a reading of these texts can be strengthened by contextualising them with relevant letters.

Lady Ranelagh's Restoration letters offer a similar range of recipes to those found in her Interregnum letters, where she suggests both chemical and herbal remedies for sick family members and friends. A series of letters she wrote in 1667 to her brother, the Earl of Burlington, shows her endorsing diverse remedies for treating her sister-in-law's illness. In April 1667, she says that she will send 'two smale Botles of sperit of *Sal*

also found in the tree *cinammonum camphora*. See Oxford Reference Online, <www.oxfordreference.com> [Accessed 7 July 2009].

Armoniacke for her', which she procured from 'My Br: Robin' (her affectionate name for Robert Boyle).³¹ *Sal Armoniac*, or more commonly *Sal Ammoniac*, refers to ammonium chloride, which is sometimes named as the third of the four spirits of Helmontian alchemy.³² She adds further advice, explaining that Robert says Lady Burlington 'may use sperit of Harts horne', but that Lady Ranelagh will not be sending this because they were 'destetute of any'. She suggests to Lord Burlington that 'if out of yr Parkes yu would send up hornes either of stags or Buckes old or new I would have sperit made for & sent to her'. Spirit of Hartshorne is another chemical remedy, made by distilling ammonia, which was found in the horns of a hart.³³ While Lady Ranelagh is offering a chemical remedy that originated with Robert Boyle, she also takes an active role by requesting ingredients from Lord Burlington and offering to have the spirit made for her sister-in-law. She is aware of how to obtain ammonia and how to distil it to produce a liquid with active properties.

Lady Ranelagh's association with chemical remedies during the Restoration may also be seen when she was treating her friend Lady Clarendon (the wife of Edward Hyde, Earl of Clarendon) who was extremely ill in July 1667. Lady Ranelagh wrote about the event in a letter to her brother Lord Burlington, explaining that 'last night I was waked at about midnight wth a letter from yr daughter Hide informeing me of My La: Clarindons extreme illness at Tunbridge & desiring some of Sir Walter Rawleighs Cordial for her

³¹ BL Add. MS 75354, fols. 61r-62v. Letter, Lady Ranelagh to the Earl of Burlington, 27 April 1667. For more on Robert Boyle's interest in medicine, see Barbara Kaplan, *'Divulging of Useful Truths in Physick': The Medical Agenda of Robert Boyle* (Baltimore: Johns Hopkins University Press, 1993).

³² Lyndy Abraham, *A Dictionary of Alchemical Imagery* (Cambridge: Cambridge University Press, 2001), p. 176.

³³ See *OED* definition for 'hartshorn'.

who is I doubt in very great danger'.³⁴ The Clarendon household knew that Lady Ranelagh would have a supply of this popular chemical medicine (which relied on the active ingredient *Aqua Vitae*) and sent her an emergency letter in the middle of the night to procure some from her. This shows her high profile medical reputation and provides evidence of the type of medicine she had on hand.

Yet, as with her letters to Hartlib a decade earlier, in 1667 Lady Ranelagh also offered plant-based remedies to her sick friends and family members. One week after she wrote to Lord Burlington suggesting the Spirit of Hartshorne, Lady Ranelagh wrote again to her brother about her sister-in-law's illness, and this time suggested mistletoe: 'I went to my Sis: Warwick for some misselto of ye Oake for my D[eare]st Sister but she has not one dose here & but a litle at Leese locked up ... I am confident some might be found upon ye old Oakes in yr parts if diligent search were made for [Page Torn] wch its worth for it's a rare remedy'.³⁵ Since she is not sending the remedy, Lady Ranelagh again offers a suggestion as to where to find the key ingredient, demonstrating her knowledge of plant-based remedies as well as chemical compounds. This example is characteristic of her medical advice in letters throughout the Restoration as well as the Interregnum, and it suggests that Lady Ranelagh used and promoted a diverse range of medical treatments.

While these examples provide plenty of evidence of Lady Ranelagh's interest in collecting and circulating effective medical recipes, they do not necessarily demonstrate her understanding of why certain remedies work, or what are the underlying causes of

³⁴ BL Add. MS 75354, fols. 97r-98v, Letter, Lady Ranelagh to the Earl of Burlington, 30 July [1667]. 'Yr daughter Hide' refers to Burlington's daughter Henrietta Boyle (1646-1687), who married Laurence Hyde (c.1642-1711), the son of Edward Hyde, 1st Earl of Clarendon, in 1665.

³⁵ BL Add. MS 75354, fols. 63r-65v. Letter, Lady Ranelagh to the Earl of Burlington, 4 May [1667]. Lady Ranelagh was still trying to get her sister Mary Rich, Lady Warwick, to send mistletoe to her brother in late July 1667. See BL Add. MS 75354, fols. 97r-98v. Letter, Lady Ranelagh to the Earl of Burlington, 30 July [1667].

certain illnesses. This is typical of the recipe genre as a whole, both in isolation and in the form of a receipt book, which has caused some historians to suggest that women would defer to physicians on such matters. However, Lady Ranelagh's letters also show her questioning the reasons behind certain illnesses and offering her personal opinion as to the causes. When these reflections on the causes of illness are combined with the range of treatments she prescribes, Lady Ranelagh's complex and thorough medical practice and knowledge emerge.

In a letter to her brother Lord Burlington, probably written in January 1666, Lady Ranelagh replies to the 'unwelcome' news that he is sick again with 'soe great an enemy as ye goute'.³⁶ Instead of offering him a recipe, as she does in many of her letters, she tells him 'I must suspect our French diet of mixed meates & high taste to be ye great cause of ye general spreading of yt disease amongst our great ones'. Her theory about the prevalence of the gout is a socio-cultural critique informed by Galenic doctrine. In her experience, she saw the rich members of society suffer from the disease more than the poor, and perceptively identified the excessive amount of 'meates' and 'high taste' as the cause. Traditional Galenic medicine proposed many direct links between an excess of a particular food and an illness or infection in a certain part of the body.³⁷ Following this logic, Lady Ranelagh might naturally deduce that an excess of meat and fat could result in a swelling of the foot. Indeed, the idea that a meat-heavy diet caused the gout was also espoused by the Cambridge-educated medical practitioner Francis Fuller (1670-1706),

³⁶ BL Add. MS 75354, fols. 55r-56v. Letter, Lady Ranelagh to the Earl of Burlington, 31 January [1666].

³⁷ Ken Albala, *Food in Early Modern Europe* (London: Greenwood Press, 2003), esp. chapter 'Diet and Nutrition', pp. 213-230.

who would later print a similar assertion in the preface of his *Medicina gymnastica* (1705).³⁸

Lady Ranelagh's endorsement of Galenic theories may be found in other Restoration letters, where she discusses the need for the body to maintain a proper balance of the humours. This may be achieved by adhering to an appropriate 'diet' — a term used not only for restricted food intake, but for a complete regimen that also required an adjustment in sleep patterns, monitoring bowel movements, and implementing an exercise plan.³⁹ She passed on to family members information about such comprehensive diets, which she had learned about from physicians and which she felt should be used in addition to medication. When she wrote to her sister-in-law Lady Broghill (later Countess of Orrery) about the illness of Lord Broghill, Ranelagh also sent a parcel of chemical medicines, with directions for their use; however, she also suggested dietary changes which he must implement in addition to taking his medications. She explained that he must add 'a Constant Care, of his diet, & exercise yt, in never eating, any thing hard of digestion (as al strong meates must be to him, yt is soe seldom able to use exercise,) & in rather chuseing to eate oftener in a day & a little at a time yn one ful meale & noething else I hope he might (by ye blessing of god) recover to himself'.⁴⁰

Lady Ranelagh offered similar advice in 1667 on her sister-in-law Lady Burlington's illness. In a letter to her brother Burlington, Lady Ranelagh explains that a doctor ordered

³⁸ In the preface for *Medicina gymnastica*, Fuller says, 'there have been some Gouts in some temperate Persons, of a strong and rank Constitution, which nothing could remove but a very low Diet, and an entire Abstinence from Flesh; to them Flesh being as Wine is to others, who contract that Distemper by their Excess'. See Francis Fuller, M.A., *Medicina gymnastica: Or, a Treatise Concerning the Power of Exercise, with Respect to the Animal Oeconomy* (London: 1705), sigs. A4v-B1r.

³⁹ Albala, *Food in Early Modern Europe*, pp. 213-230.

⁴⁰ West Sussex Record Office, Petworth House, Orrery MS 13219, Letter 18, Letter, Lady Ranelagh to Lady Broghill. This letter is undated, but it must date prior to September 1660, when he was created Earl of Orrery.

that ‘she must by noe meanes eat raw fruite & [he] wishes yt yu & she lay assunder. he says he hopes this may grow from a scurbutical humor she is subject too & yt yn it may be fetched of by a regular & speedy use of remedys’.⁴¹ This shows that in addition to recommending medicines, as evidenced in her receipt books and in the extracts of the Hartlib Papers, Lady Ranelagh also endorsed a more complex health plan based on a Galenic model of dietary changes. Her differing systems mingled together without causing her difficulty, demonstrated by her prescribing a chemical medicine at the same time as suggesting a restriction on certain meats.

Lady Ranelagh also endorsed the healing properties of blood-letting, which was based on Galenic principles. In August 1667, after her sister-in-law had been sick for months, Lady Ranelagh suggested that blood-letting might prove beneficial:

as my owne simple sence I beg yu would have one in yr house as a barbar or some other se[r]v[an]t yt may let bloud wel yt bringing out of those fits when other things cannot & they seieseing her not after a long sicknes yt might have weakened her. but upon a sudaine if other remedys bring her not quickly to her selfe yt may be used wch if yu have not one at hand to do hee may be yn sent for too late, there need but litle bloud be taken.⁴²

Another example may be found as late as 1676, when Lady Ranelagh wrote a letter to her friend John Eliot concerning the ‘Christian Indians’ in New England, for whom Eliot felt responsible. After the natives had fallen sick after surviving a harsh winter sequestered on an island, she wrote to Eliot to offer her sympathies and to say that ‘We here find bleeding excelent good to prevent coughs from growing to a dangerous height’.⁴³ Blood-letting was used to rebalance the humours, as blood was drained from a part of the body

⁴¹ BL Add. MS 75354, fols. 107-110, Letter, Lady Ranelagh to the Earl of Burlington, 17 August [1667]. ‘Scurbutical’, or ‘scurbutic’, refers to one suffering from scurvy, a disease caused by a deficiency in Vitamin C.

⁴² BL Add. MS 75354, fols. 105r-106v, Letter, Lady Ranelagh to the Earl of Burlington, 13 August [1667].

⁴³ Royal Society Library, RB/3/5/9, Letter, Lady Ranelagh to John Eliot. For more on the context of this letter, see above in Chapter One.

associated with the humour which was thought to be in excess. This ancient tradition was based on a Galenic doctrine which was prescribed and practised by many physicians and surgeons until the nineteenth century. These passages show her suggesting blood-letting based on her understanding that this is effective — not simply passing on direct information gained from a doctor. She thereby endorsed remedies promoted by the College of Physicians and often operated within a Galenic model of the body.

A reading of her letters demonstrates that Lady Ranelagh promoted a mixed doctrine of ‘old’ and ‘new’ medical remedies throughout the latter half of the seventeenth century. In theory, promoting universal recipes and endorsing Galenic doctrines based on the humours should be diametrically opposed, as they worked under two different understandings of corporeal illness. Galenic medicine taught that each body was different, and a cure must be personalised for an individual to treat his or her humoral imbalance. However, a universal medical recipe assumed that all patients’ bodies were the same, and that everyone experienced illness in the same way.⁴⁴ One reason for her mixture of medical systems may be found in a metaphor she used in a letter to her brother Burlington in April 1659. When discussing the character of Walter Pope, a tutor to her son, Lady Ranelagh explained to Burlington, ‘I tooke Mr Pope as I would take Physick rather upon Experience yn upon a fine resoning discourse’.⁴⁵ This reference to practising ‘Physick’, or medicine, which has been tested by experience rather than promoted by argument shows Lady Ranelagh’s engagement with the contemporary medical debate

⁴⁴Elizabeth Spiller, ‘Introductory Note’, in *Seventeenth-Century English Recipe Books: The Early Modern Englishwoman*, Series 3, Part 3, Vol. 3, (Aldershot, Hants: Ashgate, 2008), pp. ix-li (p. xx).

⁴⁵ Chatsworth House, Cork MSS, Box 31, Letter 2, Letter, Lady Ranelagh to Lord Burlington, 5 April 1659. The identity of ‘Mr Pope’ as ‘Walter Pope’, ‘my sonss tutor’, appears in Chatswoth House, Cork MSS, Box 31, Letter 7. Pope was an astronomer and writer, elected Fellow of the Royal Society in 1661. See *ODNB* entry for ‘Walter Pope (bap. 1628, d. 1714)’.

between physicians and empirics. Many vernacular medical texts were printed throughout the 1650s (when censorship had lapsed) promoting the tried and tested medicines of empirics and gentlewomen over the mere ‘talk’ offered by accredited physicians. For example, the preface to the anonymous receipt book *Natura Exenterata* (1655) began with the charge, ‘They who do (though empirically) are to be preferred before those who dispute and talk’.⁴⁶ Lady Ranelagh’s critique is similar to the attack by Philatros in *Natura Exenterata*, and her distribution of effective medical recipes shows her acting on this belief. However, as has been shown here, Lady Ranelagh also respected the opinions of physicians and suggested remedies such as blood-letting, which relied on the Galenic model of rebalancing the humours. It appears that this belief in the value of experience probably also allowed her to observe and copy the methods of physicians, as she was often in the room when they practised and she had many physician friends, as will be discussed in the next section on medical networks. Lady Ranelagh’s complicated medical system may be explained by two philosophies: she believed that God could hide medical cures in anything, and she relied on methods that were tested and approved. These beliefs united to allow her to maintain an open-minded view of medicine throughout this age of competing methods, and to mix chemical remedies along with Galenic diets, without feeling any need to declare an allegiance to either ‘new’ or ‘old’ medical paradigms.

Finally, Lady Ranelagh’s letters confirm her knowledge of anatomy, demonstrated by a curiosity in physical abnormalities and her description of an autopsy — two subjects which were rarely discussed with authority by anyone except

⁴⁶ *Natura Exenterata, Or Nature Unbowelled by the Most Exquisite Anatomizers of Her* (London, 1655), in the unpaginated preface to the reader by ‘Philatros’. For more on *Natura Exenterata*, see Elizabeth Spiller, ‘Introductory Note’, in *Seventeenth-Century English Recipe Books*, pp. ix-li (esp. pp. xxxv-xxxviii).

professional physicians and surgeons. In December 1659, Lady Ranelagh wrote to her brother Robert to relay a story that Henry Oldenburg told her in a previous letter:

Yesterday I received out of France from Mr. Oldenburg this relation, which he had from Montpellier, and which he desired me to communicate to you, and upon it to beg your thoughts, and those of your brethren philosophers, he assuring that the matter of fact is indubitably true: A woman of seventy years old, having lived about twenty four years a widow, and often complained to physicians of a heavy stony burden she carried in her belly, did precipitate herself out of a high window, and thereupon died shortly after; but being opened at Avignon, was found to have in her belly, where the intrails lie, commonly called abdomen, not in the womb, a child, of the bigness of one and six month's ordinary growth, but with an extraordinary big head, which had begun to petrify, and especially his head turned into a gypsy or chalky substance. This is surely strange, and I long to receive your thoughts upon it.⁴⁷

Though she was technically acting as an intermediary in a discussion between Oldenburg and Boyle, Lady Ranelagh's interest in and knowledge of the topic may still be gauged from this quotation. Though he was in direct correspondence with Robert Boyle by this date, Oldenburg wrote this update to Lady Ranelagh to include her in the discussion. Then, instead of asking her brother to reply directly to Oldenburg, she notes that she is also awaiting his 'thoughts upon it'. The conversation is suggestive of those that took place at early meetings of the Royal Society, and not typical of those by female lay practitioners.

In a letter to her brother Burlington written almost ten years later, Lady Ranelagh described a similar situation with authority. In May 1667, when the Duke of Kendal died just before his first birthday, Lady Ranelagh wrote to her brother, explaining 'I was there

⁴⁷ *Correspondence of Boyle*, I, p. 396. Letter, Lady Ranelagh to Robert Boyle, 3 December [1659]. According to the editors of Henry Oldenburg's letters, A. Rupert Hall and Maria Boas Hall, the part of this quotation from the colon to the word 'substance' is a direct copy from Oldenburg's original letter, though no longer extant. See *Correspondence of Oldenburg*, I (1965), p. 336. Oldenburg's correspondent in Montpellier was probably Robert Southwell (1635-1702), who was on his grand tour of the continent at this time. See *Correspondence of Oldenburg*, I (1965), pp. 336 & 342.

whn hee lay in his death pangs'.⁴⁸ She then carefully communicated the procedures used by the doctors and their agreed diagnosis of his impending death, but her most interesting bit of news comes in the postscript of this letter: 'Ye Duke of Kendal being opened his head was found ful of watter & ye membrane yt incloses ye braine so fastened to ye skul yt it could not move al his other parts sound'.⁴⁹ The letter might suggest that Lady Ranelagh was present at the Duke of Kendal's autopsy, but it seems more probable that she had received a detailed account of the procedure by one of her professional friends who was there. An autopsy was a messy procedure reserved for medical professionals, and some doctors deferred to surgeons for such bloody practices. She may have received this information from Thomas Willis, the leading physician on neurology and neuroanatomy, who was attending the young Duke.⁵⁰ Even if she was not actually present, her description of the brain is presented with medical authority and knowledge, and it reflects the professional tone of the previous letter in which she relayed Oldenburg's information about the elderly French woman's autopsy. It also suggests that the doctors shared detailed information with her as though she were a colleague.

When piecing together the various aspects of Lady Ranelagh's medical practice, it appears that she held an exceptional knowledge of the subject for a seventeenth-century woman. While she made and endorsed household medicines of various types, she also understood and promoted Galenic doctrines. Her knowledge and practice of two opposing medical theories may be coupled with her interest in and understanding of human

⁴⁸ BL Add. MS 75354, fols. 70-73, Letter, Lady Ranelagh to Lord Burlington, 25 May [1667]. The Duke of Kendal was Charles Stuart, son of James, Duke of York (later James II) and his first wife Anne Hyde (daughter of Edward Hyde, Earl of Clarendon).

⁴⁹ BL Add. MS 75354, fols. 70-73, Letter, Lady Ranelagh to Lord Burlington, 25 May [1667].

⁵⁰ BL Add. MS 75354, fols. 70-73, Letter, Lady Ranelagh to Lord Burlington 25 May [1667]. In the same letter where Lady Ranelagh describes the autopsy, she also mentions having spoken with Thomas Willis.

anatomy to present her diverse and complex medical erudition. Her fascinating and exceptional range of knowledge raises the question: from whom did she gain access to such information? The next section considers Lady Ranelagh's medical network to show that her circle of informants was just as diverse as her medical knowledge.

Lady Ranelagh's Medical Network

The question of who comprised the medical network of an early modern lay practitioner must be addressed in two halves: whom did the lay practitioner treat, and from whom did he or she gain medical advice, training and recipes? Analysing these two groups separately allows us to assess the scope of the practitioner's practice, and to identify the extent to which advice and remedies were exchanged between patient and practitioner. Exchanges of knowledge sometimes flowed both ways; for example, a gentlewoman might treat household servants, but she might also gather from them recipes of 'Kitchen Physic' for inclusion in her receipt book.⁵¹

For most female lay practitioners, their primary patients were their family members, and they may have also attended to household servants or poor people in their community. Lady Ranelagh's circle partly fits this model, in that her primary circle of patients was her family. However, instead of this family circle comprising merely her children, husband, and family members in geographical proximity, Lady Ranelagh's patients included most of her siblings and their children, creating a patient base that extended across England and Ireland. From the 1640s until the end of her life in 1691, Lady Ranelagh's letters provide evidence of fifty years of Boyle family members writing

⁵¹ This is evidenced by the many references in gentlewomen's receipt books to having received a recipe from a 'good wife' or 'nurse'.

to her for advice, asking for medicines, and requesting her to liaise with the best physicians of the day on their behalf. Just as the Duke of Ormond once pointed out that ‘her influence on her family ... is great’, it appears that this influence extended to supervising their medical care, as well.⁵² Lady Ranelagh nursed back to health her sister Mary Rich on two occasions when she was severely ill: once in 1648, when Mary suffered from the small pox, and once in 1652, when she was ‘strangly & extreemely Ill’.⁵³ On the first occasion, Lady Ranelagh went to Warwick House to help her sister, even though she herself had never had the small pox.⁵⁴ On the second occasion, her brother-in-law Charles Rich wrote a letter telling her of Mary’s illness and asking her to come to Leighs. Lady Ranelagh left immediately for Leighs and found ‘the Carcass of a friend there & her soule gonn as to any rationale use she had of it, & her kindnes to me as dead as her rasonings to her selfe’.⁵⁵ Lady Ranelagh stayed a few days until, ‘by the Drs & al Consents’, she brought her sister back to London with her. She offered similar care to her other siblings. In 1649 she offered to go to Bath to take care of Robert Boyle when he was ill, but he persuaded her not to visit.⁵⁶ In 1667 she gave dietary advice to and medical recipes for her brother the Earl of Burlington, to treat his gout and his wife’s illness.⁵⁷ She sent Spirit of Wormwood and Plaster of Caranna to her sister-in-law Lady Broghill to use in treating her husband’s illness because, as Lady Ranelagh explained, ‘I

⁵² In his letter to the Earl of Arlington on 24 August 1681, the Duke of Ormond mentioned that ‘there remains visibly some lines of my Lord of Orrery’s projection, and those tracings are kept as fresh as my Lady Ranelagh his sister can by her correspondence and influence on her family, which is great, even with her brother of Cork; as for the other branches she governs them very absolutely’. See *Calendar of the Manuscripts of the Marquess of Ormonde. K.P.*, 8 vols (London: His Majesty’s Stationary Office, 1895-1920), VI (1911), pp. 137-38. This quotation is discussed further in Chapter One above.

⁵³ Mary Rich, *Autobiography of Lady Warwick*, ed. by T. Crofton Croker (London: Percy Society, 1848), pp. 24-26; *Correspondence of Boyle*, I, pp. 135-38, Letter, Lady Ranelagh to Robert Boyle, 14 Sep. [1652].

⁵⁴ Mary Rich, *Autobiography*, p. 25.

⁵⁵ *Correspondence of Boyle*, I, pp. 135-38 (p. 136), Letter, Lady Ranelagh to Robert Boyle, 14 Sep. [1652].

⁵⁶ *Correspondence of Boyle*, I, pp. 79-82, Letter, Robert Boyle to Lady Ranelagh, 2 August 1649.

⁵⁷ See BL Add. MS 75354 for the many letters from 1667 which Lady Ranelagh wrote to her brother, Lord Burlington.

know yu by Experience to be more careful of yt health of his ... yn he is'.⁵⁸ Though the family was geographically dispersed, their concern for healthcare necessitated frequent letter exchanges with the family member most responsible for maintaining their health: Lady Ranelagh.

In addition to tending her brothers and sisters, Lady Ranelagh is mentioned in the notes of her siblings as having taken care of their children when ill. Her sister-in-law Lady Elizabeth Clifford mentions in her diary that Lady Ranelagh kept sick Clifford children in her home during the 1650s. In July 1656 when Charles Clifford was ill with the small pox, he stayed at the home of his aunt Lady Ranelagh in St. James.⁵⁹ In August and September of 1659, Courtney Clifford also stayed with her aunt Lady Ranelagh after Elizabeth's other daughter, Betty, fell ill at the Marquesse of Dorchester's Highgate home.⁶⁰ In 1676 she was called away from a casual visit to Lady Warwick in Leighs to assist her daughter-in-law, who had just suffered from a miscarriage and was 'in a very weake and dangereous condition'.⁶¹ She cared for her daughter-in-law again in 1681, and her niece Elizabeth Boyle said of the occasion, 'My poor Aunt Ranelagh ... is so affected at ye sight of it [her daughter-in-law's ill state], as I never saw her more with any

⁵⁸ West Sussex Record Office, Petworth House, Orrery MS 13219, Letter 18, Undated Letter, Lady Ranelagh to Lady Broghill. While this letter is undated, it must have been written prior to September 1660, as this is when Broghill was created Earl of Orrery. Caranna was a tree resin obtained from a West Indian tree, which was made into a plaster for external use. Spirit of Wormwood required distilling the leaves and tops of the plant Wormwood (*Artemisia Absinthium*) in wine. See *OED* entries for 'Caranna' and 'Wormwood'.

⁵⁹ Chatsworth House, Cork MSS, Misc. Box 5, fol. 3r. Journal of Elizabeth (Clifford), Lady Burlington, 1650s-1688.

⁶⁰ Chatsworth House, Cork MSS, Misc. Box 5, fol. 4v. Journal of Elizabeth (Clifford), Lady Burlington, 1650s-1688. The countess's fragmentary writing makes it unclear if Courtney herself developed the small pox or if she was avoiding her sister's contagious state, but she certainly stayed with her Aunt Ranelagh because the latter had a history of caring for ill members of the family. It must have been a relief to Courtney to know that Lady Ranelagh would know what to do should she become ill.

⁶¹ BL Add. MS 27355, fol. 4r. Diary of Mary Rich, Vol. 5, See entries for 26, 27 and 30 August 1676.

thing in my life'.⁶² Her treatment of her nieces and nephews later would extend to their children, as well. In May 1667, when Charles Clifford's son fell ill with the small pox, he wrote to his father that 'this childes sicknesse has hindred mee from visiting any boddy but my Aunt Ranelagh'.⁶³ Lady Ranelagh had a reputation in her family for providing effective and caring medical treatment and her relatives travelled long distances to be with her in their times of illness. Significantly, this tendency to rely on Lady Ranelagh's medical advice and care did not stop with her siblings, but continued with the next two generations of the Boyle family; her nieces and nephews knew that their Aunt Ranelagh would offer more effective treatment than those in their immediate household.

Outside of her family, Lady Ranelagh treated members of the community and took care of her friends when they were ill. Among the Hartlib Circle, Lady Ranelagh was treated as a respected medical authority, as supported by Hartlib's collection of nearly two dozen recipes originating with her, and his many references to her testing new recipes and offering her opinion on their effectiveness. Yet while being considered a worthy source of authority for testing recipes was relatively common, perhaps more important is that she also personally took care of her friends in this network. In January 1645, when John Dury wrote to Hartlib about the latter's illness, he said, 'I am gladde to see in the Lady Ranalaughs letter to me the sense which shee hath of yowr condition I am persuaded shee is very reall in hir affection as shee is sound in judgment, & therefore will not bee wanting in Action for what shee is able to doe'.⁶⁴ Being 'sound in judgment' is traditionally a more masculine compliment, and it shows that Dury trusted in Lady

⁶² BL Add. MS 75355, fol. 2r. Letter, Lady Elizabeth Boyle, Lady Thanet, to her mother Elizabeth, Countess of Cork & Burlington, 9 May [1681].

⁶³ BL Add. MS 75355, unpaginated. Letter, Charles, Lord Clifford, to Richard, Lord Burlington, 25 May [1667].

⁶⁴ HP 3/2/88A-89B, Letter, John Dury to Hartlib, 23 Jan 1645.

Ranelagh's ability to perform as a serious and knowledgeable medical practitioner. This letter is followed by a short note on a separate sheet that says, 'if yow shew the inclosed note as from yowr self to the Lady Ranalaugh; I make no doubt but shee perhaps will take the care of directing the making therof & so ease yow of the trouble which perhaps will bee somewhat out of yowr element but doe it if yow think good as from yowr self'.⁶⁵ The enclosure is missing, but the context suggests it was a medical recipe which Dury assumed that Lady Ranelagh could 'direct the making therof'. Here, we see Lady Ranelagh overseeing a medical preparation and administering the treatment to her patient, placing her in a position of authority over, and with more experience than, Hartlib.

Another example of her high reputation within her larger community may be seen in the case of the sick Lord Digby. In July 1667, Lady Ranelagh recalls that she 'was yesterday morning summoned to take care of my poore litle Ld Digbye at Chelsey by having word sent me yt he was there sick of ye meassels. Whether I went & carried Dr Cox with me'.⁶⁶ Lord Digby is probably the son of the Catholic Royalist George Digby (1612-77), 2nd Earl of Bristol and his wife Anne (née Russell) (c. 1620-97), as they had a house in Chelsea at this time and Lady Ranelagh was acquainted with Lady Bristol.⁶⁷ This connection is interesting because the Earl of Bristol was a fierce opponent of Lady Ranelagh's intimate friend Lord Clarendon, who is mentioned in this same letter when

⁶⁵ HP 3/2/88A-89B, Letter, John Dury to Hartlib, 23 Jan 1645.

⁶⁶ BL Add. MS 75354, fols. 97-98, Letter, Lady Ranelagh to Lord Burlington, 30 July [1667].

⁶⁷ See the *ODNB* entry for 'George Digby' and see G.E.C.'s *Complete Peerage*, II (1912), pp. 321-22. George and Rachel Bristol had at least two sons in 1667: John Digby (c.1635-1698) and Francis Digby (d. 1672). We also know that Lady Ranelagh was associated with the Bristol family through a letter written 3 June [1657], in which she asks her brother Robert to 'present [her] humble Service to my two lady Bristols'. The editorial note in the *Correspondence of Boyle* explains, 'the reference to 'two lady Bristols' suggests that it was written in the widowhood of Beatrice Digby, Countess of Bristol, whose husband John Digby, 1st Earl of Bristol died on 21 Jan. 1653. As the heir was already married there were two Lady Bristols until Beatrice's death on 12 Sept. 1658'. This suggests that Lady Ranelagh is referring to Lady Beatrice Bristol (d. 1658) and Lady Anne Bristol (1620-97). See *Correspondence of Boyle*, I, pp. 215-16, esp. p. 215, note 'c'.

Lady Ranelagh says that she also was treating Lady Clarendon's illness. While it was characteristic of Lady Ranelagh to maintain friendships with a diverse group of individuals, it is significant that she was treating illnesses for members of two households that were fiercely opposed to each other in the summer of 1667, when Bristol was active in the movement to impeach Clarendon. The need to preserve health engendered circles of medical care and co-operation that could transcend political divisions and bring together people who would otherwise have little cause to interact. Yet aside from evidencing that Lady Ranelagh maintained friendships with patients who held strongly conflicting political and personal opinions with one another, this passage is important because it shows that the Bristol family called on Lady Ranelagh as their first choice of medical practitioner outside of the family — much in the same way that they might have called on a physician. Strikingly, when summoned she brought Dr Daniel Coxe to assist her, who was a member of the Royal Society and a respected chemical physician.⁶⁸ Convention would dictate that the family would call Dr Coxe and that he might choose to bring Lady Ranelagh as an assistant. This striking role reversal places an eminent physician in the role of companion and presents Lady Ranelagh as the leading medical practitioner.

The disproportionate number of letters extant from the year 1667 show Lady Ranelagh being called on to treat a range of patients, including her sister-in-law Lady Burlington, her friend Lady Clarendon, the young Lord Digby, and the children of the royal family: the Dukes of Kendal and Cambridge. These letters are extant because they were kept with Lord Burlington's papers, and they suggest that if we had more of her

⁶⁸ See *ODNB* entry for 'Daniel Coxe (1640-1730)'. Dr Coxe will be introduced properly later in this chapter.

Restoration letters we would have even more examples of cases where Lady Ranelagh was called in as a medical practitioner. If she was esteemed as the medical advisor of the extended Boyle family and was a medical practitioner to a diverse group of intellectuals and gentry and aristocratic families based in Interregnum and Restoration London, the next question must be: how and where did she acquire this medical knowledge and reputation? The numerous examples of contemporaries calling her for advice suggest that she knew far more about medicine than most seventeenth-century gentlewomen. Therefore, it is important to analyse her larger medical network and how she achieved her extraordinary knowledge and authoritative reputation.

Andrew Wear summarises the medical network for most early modern women when he explains that ‘The “good housewife” was expected to make provision for her family’s health, and an information network consisting of her mother, relatives, neighbours, medical practitioners and books could often be drawn upon’.⁶⁹ The list of attributions in most seventeenth-century receipt books suggests that the majority of recipes originated with family members, but others were collected from a range of sources representing all aspects of the social spectrum, ranging from household servants to doctors. Much of our understanding of women’s medical networks comes from these receipt books, and to date no work has been done to consider the relationship between networks evidenced by women’s medical letters and those presented in their receipt books. The large body of letters associated with Lady Ranelagh can thus provide a first opportunity to see how genre may have shaped the way women presented their sources and how these generic conventions might distort our modern analyses of women’s medical networks.

⁶⁹ Wear, *Knowledge & Practice*, p. 52.

The series of extant letters Lady Ranelagh wrote to her brother Lord Burlington in 1667 offers a fascinating snapshot of her intellectual relationship with her brother, as well as a glimpse into her diverse medical network.⁷⁰ When her sister-in-law was ill for many months, Lady Ranelagh employed her usual method of medical assistance from afar, which was to offer her own advice and post parcels of medicines she had on hand, but also to check what doctors and family members might suggest. As mentioned previously, she began this process by asking her siblings for assistance; she procured ‘two smale Botles of sperit of *Sal Armoniacke*’ from her brother Robert and asked her sister Mary to send ‘missleto of ye Oake’.⁷¹ After asking two of her siblings, over the course of a month she also discussed her sister-in-law’s condition with some of the best doctors in Restoration London, including Dr William Quartermain, Dr Daniel Coxe and Dr Thomas Willis, and she asked them to send medicines and advice directly to the Burlington household.⁷² This snapshot of the transmission of medical knowledge shows Lady Ranelagh at the epicentre of a medical circle comprised of family members and accredited physicians, wherein she solicits their opinions and distributes their remedies

⁷⁰ See BL Add. MS 75354, fols. 50-119. Though Lord Burlington’s replies to Lady Ranelagh are no longer extant, we know that he wrote frequently to his sister because the diary that he kept throughout the 1660s records many entries stating ‘I writ to My Sister Ranelagh’. See Chatsworth House, Cork MSS, Misc. Box 1, ‘Diaries of Lord Burlington’, 3 Vols.

⁷¹ See BL Add. MS 75354, fols. 61-62, Letter, Lady Ranelagh to Lord Burlington 27 April 1667, and BL Add. MS 75354, fols. 63-65, Letter, Lady Ranelagh to Lord Burlington 4 May [1667].

⁷² Dr William Quartermain (c.1618-67) was physician in ordinary to the king from 1660-1667. In a letter to her brother on 27 April 1667, Lady Ranelagh says, ‘Dr Quarterman My D[ear] D[ear] Br[other]. not thinking it necessary to send any other thing for my D[eare]st Sisters use then these fine doses of Pills I judged it better to send ym by ye Post yan by ye carryer’. See BL Add. MS 75354, fols. 61-62, Letter, Lady Ranelagh to Burlington 27 April 1667. On Dr Daniel Coxe (1640-1730), see BL Add. MS 75354, fols. 63-65, Letter, Lady Ranelagh to Lord Burlington 4 May 1667; BL Add. MS 75354, fols. 66-67, Letter, Lady Ranelagh to Lord Burlington 7 May [1667]; and BL Add. MS 75354, fols. 68-69, Letter, Lady Ranelagh to Lord Burlington 11 May [1667]. Dr Thomas Willis (1621-75) was a chemical physician and Fellow of the Royal Society best known for his later work on neurology. She informally met Dr Willis at the Duke of Kendal’s death, but they may have been acquainted before this date. In a letter dated 25 May 1667, she explained to her brother that ‘Dr Willis being brought heather about ye two little Dukes I got his opinnion asked about my D[eare]st Sister takeing ye Scarborough waters’. See BL Add. MS 75354, fols. 70-73, Letter, Lady Ranelagh to Lord Burlington 25 May [1667].

alongside her own. She was not only knowledgeable about medicine, but also knew what remedies other family members might have on hand and passed on these medical updates to her sick sister-in-law, making medicine one factor that contributed to her maternal reputation within her family.⁷³

As this snapshot of her medical network suggests, Lady Ranelagh maintained a position of medical authority not only because of her personal knowledge, but because she also maintained a circle of informed medical advisors of various backgrounds. This circle comprised an international group of medical informants who were treated as authorities regardless of their gender, social status or political affiliation. Like her extant recipes and receipt books, Lady Ranelagh's letters name a range of individuals whose identities have been difficult to trace. For example, when her daughter Frances fell ill in 1652, Lady Ranelagh mentions that there was an 'old woman that then did & formerly had tended her'.⁷⁴ The identity of this 'old woman' will probably never be determined with any certainty, and the same may be said of some esteemed foreign medical practitioners who were not members of the College of Physicians in London. When Robert Boyle was in pain from a bladder stone in 1654, Lady Ranelagh contacted one of her medical advisors, Johann Brün, or Unmussig, and he sent Boyle a letter in Latin with a prescription.⁷⁵ Brün's identity has not been determined, except that he was a medical advisor to Lady Ranelagh and that she recommended him to serve as doctor for the household of her brother Cork (later Burlington).⁷⁶ Similarly, when her sick cousin Jenny

⁷³ As stated previously, the Duke of Ormonde said of Lady Ranelagh that 'she governed them [her family] very absolutely', suggesting that she often functioned as a mother-figure more than a sister. See *Calendar of the Manuscripts of the Marquess of Ormonde. K.P.*, VI (1911), pp. 138-39.

⁷⁴ *Correspondence of Boyle*, I, pp. 135-138. Letter, Lady Ranelagh to Robert Boyle, 14 Sep. [1652].

⁷⁵ *Correspondence of Boyle*, I, pp. 163-165. Letter, Johan Brün, [Unmussig] to Robert Boyle, 1 March 1654.

⁷⁶ *Correspondence of Boyle*, I, p. 163 note 'a' and p. 164 note 'a'.

was going to take a long journey in 1675, she consulted with a Dr Michel (probably a foreign doctor), who judged that Jenny should be able to endure the coach ride.⁷⁷

While some members of her network might remain shrouded in obscurity, many others can be identified with certainty because they were members of the Royal College of Physicians. Dr Daniel Coxe was one of Lady Ranelagh's primary medical consultants throughout the 1660s. He established a relationship with Robert Boyle in the mid-1660s, when the two exchanged several important letters on many themes, including Helmontian chymistry.⁷⁸ This esteemed physician and natural philosopher enjoyed a high public profile throughout the Restoration, as he was elected as a Fellow of the Royal Society in 1665, acted as physician-in-ordinary to Charles II, and became an Honorary Fellow of the Royal College of Physicians in 1680.⁷⁹ Dr Coxe was a constant source of help to Lady Ranelagh throughout the 1660s while she was busy caring for sick family members and friends, and he assisted her either by joining her when she was treating a patient (as he did during the case of the sick Lord Digby) or by offering medical advice and sending remedies (as he did with Lady Burlington).⁸⁰

In addition to Dr Coxe, Lady Ranelagh solicited advice from other physicians throughout the 1660s. She consulted Dr Quartermain about her sister-in-law's illness in 1667, and he prescribed some pills and suggested she may 'take the waters'.⁸¹ She knew Dr Thomas Willis, as has been suggested by the receipt book which lists both of their names on the title page, but which may be further proved by her reference to meeting and

⁷⁷ BL Add. MS 75354, fols. 118-119, Letter, Lady Ranelagh to Lord Burlington, 10 July [1675].

⁷⁸ See *Correspondence of Boyle*, Vols. 2 & 3.

⁷⁹ See entry for 'Daniel Coxe (1640-1730)' in the *ODNB*.

⁸⁰ For example, see BL Add. MS 75354, fols. 97-98, Letter, Lady Ranelagh to Lord Burlington, 30 July [1667] and BL Add. Ms 75354, fols. 66-67, Letter, Lady Ranelagh to Lord Burlington, 7 May [1667].

⁸¹ BL Add. MS 75354, fols. 61-62, Letter, Lady Ranelagh to Lord Burlington, 27 April 1667 and BL Add. MS 75354, fols. 63-65, Letter, Lady Ranelagh to Lord Burlington, 4 May [1667].

talking with him at the death of the Duke of Kendal.⁸² She was also acquainted with her neighbour Dr Thomas Sydenham, who may have bought her old place of residence when she moved into Pall Mall.⁸³ While this selection shows a few of the physicians with whom she was in frequent contact during the Restoration, there were certainly others. For example, some of her letters refer to nameless ‘Drs’, confirming their status but not offering enough information to identify them. Another letter from Lady Orrery to Lady Ranelagh suggests that the two women were also in touch with Dr Richard Lower (1631-91), who was treating Lady Orrery’s daughter in her illness.⁸⁴

While there is much evidence of her diverse medical circle throughout the Interregnum and Restoration, few solid facts about her network toward the end of her life remain. However, a series of letters she wrote to the Countess of Panmure and the Duchess of Hamilton in 1690 and 1691 demonstrate that Lady Ranelagh was still being consulted as a medical authority until her final days.⁸⁵ These letters also reveal her professional relationship with another leading surgeon and physician of her day: Sir Edmund King (1630-1709). King was a Fellow of the Royal Society, best remembered

⁸² BL Add. MS 75354, fols. 70-73, Letter, Lady Ranelagh to Lord Burlington, 25 May [1667].

⁸³ *Correspondence of Boyle*, III, pp. 234-36, 239-40. Letter, Lady Ranelagh to Robert Boyle, 18 September 1666 and Letter, Lady Ranelagh to Robert Boyle, 18 September [1666]. Also see R.E.W. Maddison, *The Life of the Honourable Robert Boyle* (London: Taylor & Francis, 1969), pp. 127-28. Dr Sydenham is introduced in Chapter One above, where his relationship with Lady Ranelagh is discussed. Though there is no solid evidence of their medical collaboration, there is no reason to assume they did not discuss the subject, especially considering their geographical proximity, shared interest in the topic, and their previously existing friendship.

⁸⁴ West Sussex Record Office, Petworth House, Orrery MS 13219. Undated letter fragment, Lady Orrery to Lady Ranelagh. In 1667, Lower was elected to the Royal Society on Robert Boyle’s nomination, offering another connection to Lady Ranelagh. He was appointed to the Royal College of Physicians in 1675 and became Royal Physician that same year, following the death of Thomas Willis.

⁸⁵ National Archives of Scotland, GD 45/14/237/1-5 and GD/406-1-3797. Margaret Maule (née Douglas) became the 4th Countess of Panmure in 1686 when George Maule, the brother of her husband James Maule (1658-1723), died. The Duchess of Hamilton was Anne Hamilton (1631-1716), who rebuilt Hamilton Palace and helped develop the town of Hamilton in southern Scotland. For more on this correspondence, see Chapter One above.

for his work with Richard Lower on early blood transfusions.⁸⁶ As late as August 1690, Lady Ranelagh was ‘discours[ing] with Sr Edmund King’ and relaying his advice to her sick friend, the Countess of Panmure.⁸⁷ As time passed, Lady Ranelagh kept abreast of developments in medicine and maintained relationships with the most respected physicians of her day.

Lady Ranelagh’s own knowledge and her distinguished circle of friends probably contributed to her distrust of many ordinary physicians, as is suggested by a letter to Robert Boyle in 1652, when she tells him that Fenton Parsons had died because of poor treatment by a physician. She explains that Parsons was ‘let bloud unseasonably by one that is called a Dr. but sure their trade is rather to Cure men of their bodys Then to cure mens bodyes of diseases’.⁸⁸ As this quotation suggests, Lady Ranelagh was highly selective in her medical friendships; she maintained a circle of the most elite medical practitioners of her day, and interacted with them as an equal.

When Lady Ranelagh’s letters are considered as a whole, it appears that while she treated a very diverse group of patients, she belonged to a distinguished circle of elite medical practitioners. Her letters suggest that the circle from which she gained most of her medical advice comprised primarily leading accredited physicians, and occasionally family members. This offers an interesting contrast to Lady Ranelagh’s extant medical recipes, which suggest that she gathered information from a wide variety of sources,

⁸⁶ King was also associated with Lady Ranelagh through his relationships with Thomas Willis and his patron Gilbert Sheldon. He attended Charles II during his fatal illness and under James II he was admitted to the Royal College of Physicians. See *ODNB* entry for ‘Sir Edmund King [alias Freeman] (bap. 1630, d. 1709)’.

⁸⁷ National Archives of Scotland, GD 45/14/237/1-5, Letter 2. Letter, Lady Ranelagh to the Countess of Panmure. This letter is undated, but it is in a series between one dated 31 July 1690 and one dated 9 August 1690.

⁸⁸ *Correspondence of Boyle*, I, pp. 135-38, Letter, Lady Ranelagh to Robert Boyle, 14 September [1652]. Fenton Parsons of Lincoln’s Inn had done legal work for Lady Ranelagh and Robert Boyle’s father, the 1st Earl of Cork. See *Correspondence of Boyle*, I, p. 137, note ‘c’.

including men and women of very different social standing and academic accreditations. As discussed in the previous chapter, BL Sloane MS 1367, the copy of a receipt book that was compiled by Lady Ranelagh, is dominated by recipes from the lower gentry. Sources with the title 'Ms' and 'Mr' represented 19 of the 43 unique attributions within the volume, suggesting that almost half of her recipes were gathered from those socially below her. No family members were named, and physicians represented the third most popular grouping (behind the upper gentry and aristocracy). Therefore, the medical circle represented by her letters is completely different from that demonstrated by her receipt book.

The difference between these two findings might be explained by the nature of each genre, which can offer a distorted view of a medical network. Recipes were tried as a first solution when one fell ill, and it was a form of writing that people of different social ranks were able to compose, collect and distribute. Further, the extant receipt books with medical recipes from household servants suggest that these documents also contain some traces of oral communication. In many ways, it is the most egalitarian genre of writing available to literate people of the early modern period, and therefore it is not a surprise that extant recipes and receipt books should suggest such diverse medical networks. The letter, on the other hand, may have been used to circulate a recipe, but it had other exclusive functions, such as contacting a source of medical authority when domestic remedies had failed. The letter also allowed for a transmission of medical advice that could not be easily distilled into the form of a recipe, which would include much of the advice that originated with a physician (which may have been personalised to an individual's humoral balance or may relate to more complex dietary changes). A

more comprehensive study of the interaction between early modern women's letters and receipt books, with specific reference to medical networks, would be needed before making any more general argument. However, in the specific case of Lady Ranelagh, the contradictory findings show that the letters and recipes must be read together to offer a more complete picture of her medical network.

The next section builds upon this consideration of genre to suggest that the letter-writing genre may have lent itself to early modern women as a space for asserting intellectual autonomy. Lady Ranelagh's language is analysed to show how she presented herself as a medical authority in her letters, and this is compared to her more limited displays of authority through recipe exchanges, as seen in the Hartlib Papers. Her extant letters show that she did not always defer to the opinions of her professional friends, and would often either criticise their advice or build upon it to find a way to harmonise their opinions with her own.

Gender and Medical Authority in Lady Ranelagh's Letters

While women's involvement in early modern medicine has been well documented, their writings about medicine are less known. This may be partly because most research in this area has focussed on printed publications by and for women. Lynette Hunter has established that the first medical books in English written by and for women were printed in the 1650s, and Elaine Hobby has documented an outpouring of medical texts written by women which were printed throughout the second half of the seventeenth century.⁸⁹ While the majority of these texts were instructional manuals or household receipt books, there were a few exceptions. Jane Sharpe's *The Midwives Book* (1671) is 'the first and

⁸⁹ Lynette Hunter, 'Sisters of the Royal Society', and Hobby, *Virtue of Necessity*, esp. Ch. 7.

only midwifery manual written by a woman in England before 1700’ and Mary Trye’s *Medicatrix, Or The Woman-Physician* (1675) is a spirited defence of chemical medicine which vindicates the memory of her father Thomas O’Dowde (a chemical physician who died while administering medicines during the Plague of 1665) and promotes her new medical practice in London.⁹⁰

However, printed medical texts by women were the exception, and the majority of women who chose to write about the subject would record their thoughts and evidence of practice in domestic manuscript genres such as receipt books, diaries and letters. There has been some excellent recent research on manuscript receipt books using these sources to document women’s medical practice, and my own work on Lady Ranelagh’s recipes and the receipt books associated with her has helped to identify what type of medicine she practised and the nature of her diverse medical network.⁹¹ However, women’s letters are an under-used source for answering these same questions, and the work presented above in this chapter suggests that a woman’s medical network as suggested by her letters may be different from that presented by her receipt books.

When comparing these two genres as repositories for women’s medical knowledge, the differences inherent between them would naturally create two very different displays of such knowledge. Receipt books were collections of remedies which contained ingredients and instructions so that the procedure could be replicated in a time of need. Elaine Leong has argued that receipt books also ‘acted as a “secondary” medicine cupboard and offered householders a wide supply of medical information just

⁹⁰ Cody, ‘Introductory Note’, in *Writings on Medicine*, p. xi.

⁹¹ For example, see Jennifer Stine, ‘Opening Closets’; Elaine Leong, ‘Making Medicines in the Early Modern Household’, *Bulletin of the History of Medicine*, 82 (2008), 145-68.

for the price of collecting the information and putting pen to paper'.⁹² Therefore, as collections of practical information, they were not the obvious place for a woman to write a treatise engaging in a contemporary medical debate, or to offer a controversial display of medical authority. While some receipt books contained material not directly related to medicine or cookery, such as poems or family records of births and deaths, the main purpose of a receipt book was either utilitarian or to serve as a treasured collection — or both.⁹³ The suggestion of an unknown audience may have further censored women's self-promotion as medical authorities, as receipt books were often used by many members of a household or were circulated to a wider circle of friends. For example, two receipt books compiled by Sir Cheney Culpeper's wife were circulated to Samuel Hartlib and Benjamin Worsley for copying, and Culpeper was forced to write to Hartlib multiple times to have the books returned, as his wife 'dothe muche valewe them'.⁹⁴

On the other hand, the letter is a genre ripe with persuasive potential and known for its many examples of women strongly displaying authority and autonomy. While the nature of the recipient would certainly shape the writer's self-presentation, the illusion of a limited audience and the ability to write in a genre that was socially appropriate for women make letters one of the most diverse, personal, and fascinating examples of early modern women's writing. Yet scholars whose focus is letter-writing have not paid attention to how women used this traditionally persuasive genre to craft an image of

⁹² Leong, 'Making Medicines', p. 167.

⁹³ For example, see Mary Hodges's Receipt Book, Wellcome Library Western MS 2844, which begins with a dedication poem; Bridget Parker's Receipt Book, Wellcome Library Western MS 3768, which includes an original poem that borrowed some imagery found in George Herbert's poem 'Grief', printed in *The Temple* (1633); and Anne Glydd's Receipt Book, British Library, Add. MS 45196, which includes a birth and death record for the Glydd family as well as a short biography of her deceased husband.

⁹⁴ See the letters written throughout 1647 in 'The Letters of Sir Cheney Culpeper (1641-1657)', ed. by M.J. Braddick and M. Greengrass, in *Seventeenth-Century Political and Financial Papers*, Camden Miscellany XXXIII, 5th Series, Vol. 7 (Royal Historical Society: London, 1996), pp. 105-402 (esp. pp. 302, 310, & 315).

medical authority. James Daybell's excellent collection of essays on women's letter-writing discusses the 'religious, creative, literary, political and familial' impulses behind women's letter-writing, but aside from a chapter on Lady Arbella Stuart which analyses her use of letters to discuss her own illness, there is no discussion of a medical inclination within the genre.⁹⁵

Lady Ranelagh's letters have been shown to be well-written, with a sophisticated development of argument and a nuanced display of persuasion developed through thoroughly informed references to contemporary politics, religious debates and intellectual traditions.⁹⁶ Her contemporaries recognised her skill, which is why some of her letters exist in multiple manuscript copies and why others were copied as lengthy extracts in letters written by her friends.⁹⁷ However, her manipulation of the genre as an appropriate medium for expressions of medical authority has not yet been discussed by scholars. In this section, I will show how Lady Ranelagh's letters to family members and intimate friends (who were trustworthy recipients) included controversial critiques of physicians and ethical assessments of the medical establishment which allowed her to develop a personal medical philosophy that yoked her advanced knowledge of the subject with her moral responsibility to her patients. While her letters have provided us with the most authoritative information on her medical knowledge and network, they are also the

⁹⁵ See *Early Modern Women's Letter Writing, 1450-1700*, ed. by James Daybell (Basingstoke: Palgrave, 2001). The essay on illness is Sara Jayne Steen, "How Subject to Interpretation": Lady Arbella Stuart and the Reading of Illness', pp. 109-126.

⁹⁶ Elizabeth Anne Taylor, 'Writing Women, Honour, and Ireland: 1640-1715', 3 vols (unpublished doctoral thesis, University College Dublin, 1999), II, Ch. 4. and Ruth Connolly, "'All our Endeavours Terminate but in This': Self-Government in the Writings of Mary Rich, Countess of Warwick, and Katherine Jones, Lady Ranelagh' (unpublished doctoral thesis, University College Cork, 2004), esp. Ch. 5

⁹⁷ For an example of multiple manuscript copies, see the two copies of her letter to the Queen of Bohemia: Victoria and Albert Museum, National Art Library, Forster MS 454, Letter 74, 40/1 and National Archives, TS 23/1/43. For an example of a lengthy extract, see Letter, Samuel Hartlib to Dr John Worthington, 30 January 1659, in *The Diary and Correspondence of Dr. John Worthington*, ed. by James Crossley, 3 vols (Manchester, 1847-86), I (1847), pp. 162-77, esp. pp. 165-66.

best source for examining how she established a reputation for intellectual authority among those working both inside and outside the formal medical establishment.

As stated previously, scholars have suggested that the traditional treatment of health problems began with the household and moved to outside sources, such as physicians and surgeons, when domestic remedies had failed. This ideal model of the transmission of knowledge suggests that the physician would then treat his patients and the patients would follow these instructions. However, Lady Ranelagh's letters demonstrate that she often contradicted treatments prescribed by physicians, or that she would present them with alternative options that she had found effective, as I will show later in this chapter. The resulting system is therefore more complex, showing a reversible system of knowledge transmission (with information being both given and received by the female lay practitioner and the physician) as well as displaying how a fluid mixture of professional and domestic remedies may have been employed to treat an individual illness.

A common way of presenting oneself as a medical authority in the epistolary tradition was to enclose a recipe in one's letter and state the effectiveness of the cure as one had personally witnessed it. This tradition was used by seventeenth-century letter writers of diverse educational and social backgrounds, and may be found in letters from Samuel Hartlib to Sir Cheney Culpeper, and from Mary Rich, Countess of Warwick, to her brother Lord Burlington.⁹⁸ As has been discussed above, Lady Ranelagh participated in this conventional display of medical authority by circulating to family and friends

⁹⁸For Hartlib to Culpeper, see *The Letters of Sir Cheney Culpeper*, pp. 369-71. There are three letters from Culpeper to Hartlib in June and July 1657 regarding a recipe for the piles that Hartlib had sent him. For Lady Warwick to Lord Burlington, see BL Add. MS 75354, fol. 126, Letter, Lady Warwick to Lord Burlington, 31 Jan [no year].

remedies that either originated with her or that she had found effective through practice. However, the most fascinating way in which she used the letter was to present more controversial assertions of medical authority, as may be found in her letters to her brother Lord Burlington in 1667.

When Lady Clarendon was near death in August 1667, Lady Ranelagh wrote to her brother Lord Burlington about her experience of treating her patient alongside ‘ye best Drs in towne’.⁹⁹ At the beginning of the narrative, Lady Ranelagh explains that when she arrived ‘there being noe Dr present I ventured to give her something yt did a litle waken her’. Later when the doctors were present, ‘they apoynted her several remedys but nothing has wrought wch has left her case very hopless in ye opinnion of ye Drs’. However, instead of deferring to their opinion, Lady Ranelagh took the situation into her own hands. She explains that ‘a large bottle of sperit of hartshorne yt I procured has for some time by being held under her nose waked her’. While this letter begins with a modesty topos that upholds the traditional hierarchy of medical knowledge, Lady Ranelagh asserts herself enough to disagree with the doctors and to offer her patient a medical treatment that the doctors had not prescribed.

Lady Ranelagh’s treatment of Lady Clarendon continued, and two days later on 10 August 1667 she wrote again to her brother Lord Burlington to tell him that her friend and patient had finally died. Her narrative continues where her last letter ended, explaining that:

her soule & her body together nature being soe farr weakened as to be unable to worke together wth ye remedys yt Drs had upon consulte agreed to give her, none of al wch had soe visible an operation as to wakening & rouseing her as a large bottle of very quick sperit of harts horne yt I procured for her, held under her nose wch ye Drs confesed

⁹⁹ BL Add. MS 75354, fols. 99-100. Letter, Lady Ranelagh to Lord Burlington, 8 Aug. [1667].

was as proper as any thing yt could be used to her ...¹⁰⁰

As in her previous letter, Lady Ranelagh begins by describing the doctors as overseeing the whole treatment, but this conventional beginning allows her a quick digression into self-promotion, where she explains that her remedies were more effective than those prescribed by the doctors. She concludes by saying that the doctors ‘confesed’ that her Spirit of Hartshorne was just as effective as their remedies, possibly hinting at their unwillingness to compromise their position of authority.

Lady Ranelagh employs a similar technique in her correspondence with the Countess of Panmure in 1690. When Lady Panmure fell ill, Sir Edmund King prescribed some waters for her to drink, though she did not find much improvement in her health. Lady Panmure then wrote to her friend Lady Ranelagh to ask her advice and to ask her to speak with the latter’s associate, Sir Edmung King, when she had a chance. Lady Ranelagh replied with shock that Lady Panmure was not recovering because she said that ‘Sr Edmond King assured me [your Ladyship’s health] was much increased by ye waters’.¹⁰¹ She then begins her advice with a disclaimer, saying ‘I dare not send yr La[dyshi]p any oppinion contrary to Sr Edmuds’ [sic], thereby properly deferring to medical authority. However, she then quickly contradicts herself by explaining ‘If there be no more aga[in]st yr takeing ym a few days longer but a litle wearynes yt yu may have of ye place I doubt not but yu wil under go yt pennanes for an increase of health & I wil discourse yt matter god wiling with Sr Edmund ye 1st time I see him’.

¹⁰⁰ BL Add. MS 75354, fols. 101-105. Letter, Lady Ranelagh to Lord Burlington, 10 August [1667].

¹⁰¹ National Archives of Scotland, GD 45/14/237/1, Letter, Lady Ranelagh to the Countess of Panmure, 31 July 1690. Lady Panmure’s letter to Lady Ranelagh is no longer extant, but the contextual information offered above is quoted in this reply from Lady Ranelagh.

The relationship between Lady Ranelagh's and Sir Edmund King's advice becomes even more confused in the next letter in this sequence. One week later, Lady Ranelagh wrote to Lady Panmure about her promised discussion with King. She explains that 'he is more for yr drinking ye waters to ye end of yr eight weekes as pirgeing yt best for yr La[dyshe]ps health but I have obtained from him his consent yt yu should bate 4 or 5 days of ys time if you wil makes use of yt libertie wch he hopes yu wil not, I am sure I wish & hope yu wil resolve upon yt wch wil doe yu most good'.¹⁰² Following her typical format, Lady Ranelagh presents the physician's opinion first, but also incorporates her opinion. She concludes by leaving Lady Panmure to her own judgement about what may be best for her own health, leaving subtle permission for the Countess to disagree with the doctor's orders.

One of Lady Ranelagh's most unconventional displays of medical authority appears in a letter she wrote to her sister-in-law Lady Orrery, the original compiler of Wellcome Library Western MS 1340. As this receipt book and her extant letters suggest, Lady Orrery also had an extensive knowledge of medicine and treated many Boyle family members and friends living in Ireland. In a letter written to her sister-in-law prior to 1660, Lady Ranelagh included a receipt book from her friend Gerard Boate, a fellow member of the Hartlib Circle. After Boate died in 1650, Hartlib acquired his medical papers, which included his 'choicest secrets'.¹⁰³ Lady Ranelagh may have received these papers from either Hartlib or Boate himself, and she wrote to her sister-in-law:

I send yu Dr Botes Booke to write out for yr owne use but must beg yu yt noe Dr nor Apothecary may have any thing out of it because he has a

¹⁰² National Archives of Scotland, GD 45/14/237/1-5, Letter 2, Letter, Lady Ranelagh to the Countess of Panmure, 9 August 1690.

¹⁰³ See *ODNB* entry for 'Gerard Boate [formerly Gerrit Boot] (1604-1650)' and see HP 28/2/57A, 'Ephemerides' 1653, Part 2.

sonn of his owne yt is studying towards being of his fathers profession, & therefore for him I would reserve ye assistance of his fathers Experim[en]ts from al other Drs but our selves. Yet to further yr practise I hasten it to yu.¹⁰⁴

In saying ‘al other Drs but our selves’, Lady Ranelagh refers to herself and her sister-in-law as physicians — a term usually reserved for those with medical qualifications. While Margaret Pelling has shown that some ‘irregular practitioners’ self-identified as doctors, these were *male* practitioners, as the term was never used by gentlewomen to describe their humble charitable practices.¹⁰⁵ This passage adds further weight to the argument that Lady Ranelagh considered herself to be an exceptional lay practitioner on the same level as accredited physicians.

Thus far the material suggests that Lady Ranelagh did not automatically defer to physicians, but held her own opinions and trusted enough in her own abilities to disagree with the professional diagnosis. Though research into early modern women’s medical authority is very limited, this does not match the paradigm presented by historians of medicine, which suggests a gentlewoman would offer her opinion in the first instance, but would then defer to the professional physician once he offered his diagnosis. Lady Ranelagh’s disagreements with physicians make her appear slightly difficult and stubborn, though we know that she consistently maintained relationships with the leading physicians of her day and maintained an honourable reputation as a medical practitioner throughout her life. This therefore leaves us with several questions: what propelled Lady Ranelagh to disagree with the professional opinion? What allowed her an exceptional

¹⁰⁴ West Sussex Record Office, Petworth House, Orrery MS 13219, Letter 18, Undated Letter, Lady Ranelagh to Lady Broghill. This letter must date prior to 1660, when Lady Broghill became Countess of Orrery.

¹⁰⁵ Pelling, *Medical Conflicts*, Ch. 5.

confidence in her own approach? Why did the physicians maintain a relationship with her when she may have appeared an interfering amateur?

Two major contributions to Lady Ranelagh's self-confidence must have been her elevated social status and her high level of expertise. As a viscountess, she was socially superior to most of her fellow medical practitioners, and her status and wealth would have influenced the way that physicians responded to her. Similarly, the expert knowledge she had acquired and the wide range of patients she treated would have contributed to her self-confidence. She was an elite woman with an exceptional knowledge of medicine, and this was recognised by both herself and her contemporaries.

Yet there is another factor that also contributed to Lady Ranelagh's medical self-confidence: religion. Her interest in medicine was primarily to help people, for it was a form of natural philosophy useful to all. This belief was evidenced first during her utopian days as a medical informant for the Hartlib Circle, but it continued throughout the Restoration when she offered her charitable service to friends, family members and people in her wider community. Her letters are filled with religio-medical metaphors, where illness and health are ultimately decisions from God. In her letters she repeatedly uses the phrases 'god willing' or 'if it please god' when she offers a medical recipe (a convention that was becoming less popular by the end of the seventeenth century), and many of her letters defer to God as 'ye great Physician'.¹⁰⁶ She transfers this belief that one will only recover if God permits into an empowering act, almost extending as far as referring to her own medical practice as divine inspiration. In 1652 when her daughter

¹⁰⁶ For example, see BL Add. MS 75354, fols. 83-84, Letter, Lady Ranelagh to Lord Burlington, 22 June [1667]; Royal Society Library, Boyle Letters, Vol. 1, fols. 17-18, Lady Ranelagh to John Eliot, 13 August 1676; and West Sussex Record Office, Petworth House, Orrery MS 13219, Letter 10, Lady Ranelagh to Lady Orrery, 11 September [no year, but must be post-1660 because of the Orrery title].

Frances was ill and was being treated by an ‘an old woman’, Lady Ranelagh was devastated that ‘my poore Franke’ was not recovering. She explained the situation in a letter to her brother Robert, saying ‘but god was pleased to give me soe much Courage upon that information, as to resolve not to trust the old womans fumbleing feeling, but to try my Selfe which I did & found cleerly that she was mistaken’.¹⁰⁷ Her confidence that God would not have allowed her to disagree with this woman if she was not correct inspired her with the strength and courage to believe in herself and act according to her instinct. Her complete faith in God’s will resulted in her providential interpretations with specific reference to death and illness, as demonstrated in her view of the Duke of Kendal’s death as being God’s punishment for the royal family’s sins;¹⁰⁸ however, it also gave her the courage to act in a manner that was unconventional for an early modern woman.

In many of the letters where she critiques physicians, she does this on the grounds of medical ethics, with her moral superiority granting her permission to exert her own opinion. Her biggest critique of the medical profession is of physicians who prematurely stop treating their patients — those who determine that their patients are beyond help and leave them alone in their dying hour. When she was treating Lady Clarendon during the latter’s fatal illness in August 1667, Lady Ranelagh explains in a letter to her brother Burlington the different ways in which she and the doctors viewed their responsibility to their patient:

they apoynted her several remedys but nothing has wrought wch has left her case very hopeless in ye opinnion of ye Drs yet I act by ye Proverbe yt says as long as there is life there is hope, & a large bottle of sperit of Hartshorne yt I procured has for some time by being held under her nose

¹⁰⁷ *Correspondence of Boyle*, I, pp. 135-138, Letter, Lady Ranelagh to Robert Boyle, 14 September [1652].

¹⁰⁸ This was discussed in Chapter One, above.

waked her¹⁰⁹

The proverb ‘as long as there is life there is hope’ was, and still is, a popular saying which Lady Ranelagh uses here to inform her medical ethics. As a medical practitioner, her obligation is to treat her patients until their last breath, as giving up prematurely is likened to leaving someone to die. This ethical responsibility to her patient instilled in her the courage to disagree with the doctors and to offer her own treatment to Lady Clarendon, which helped alleviate some of the pain and suffering felt by the sick woman until she finally died.

When Lady Ranelagh described the Duke of Kendal’s death in a letter to her brother Burlington in May 1667, she was even harsher on the physicians who had given up prematurely. She explained that the young duke was screaming in pain during his final convulsions and that ‘his Ma[jes]ty & his Highnes’ asked the doctors if they could help, but the doctors replied that ‘they had donn al they could’.¹¹⁰ This angered Lady Ranelagh, who wrote to her brother, ‘such Phisitions of noe valew & miserable comforters are ye greatest & most skilful of creatures in a dyeing houer’. This critique is characteristic of Lady Ranelagh’s bold sarcasm, and by beginning this sentence with the phrases ‘noe valew’ and ‘miserable comforters’, she assures the reader that her following comments about being great and skilful are ironic. This is a forceful critique of the traditional medical hierarchy: while physicians would have been called in during these most extreme situations, in Lady Ranelagh’s opinion they offered little or no help. Her belief that medical practitioners have a moral responsibility to help their patients until the very end

¹⁰⁹ BL Add. MS 75354, fols. 99-100, Letter, Lady Ranelagh to Lord Burlington, 8 August [1667].

¹¹⁰ BL Add. MS 75354, fols. 70-73, Letter, Lady Ranelagh to Lord Burlington, 25 May [1667].

again allows her to offer a damning critique of a system that is failing those who need help the most.

Because of Lady Ranelagh's elevated rank, and because her criticism stemmed from her religious beliefs, she had the rare ability to maintain the respect of the most distinguished members of society at the same time as criticising them. Unlike other female medical practitioners such as Mary Tyre who were openly critical of doctors, and unlike the many women who faced examination by the Royal College of Physicians, Lady Ranelagh appears to have escaped criticism. Instead, she maintained a high reputation as a medical authority throughout her life, with medical practitioners respectfully calling her 'the most noble Lady R'.¹¹¹ She was of course exempt from much criticism because she was an elite woman, but her critiques of the medical profession are much bolder than those espoused by most women of her rank. It is probably because of the discreet manner she used when criticising social and intellectual hierarchies — where she was careful to work within societal mandates for a gentlewoman — that she escaped criticism. Her harshest evaluations of the medical establishment are only found in letters to her brother, Lord Burlington. When writing to this exclusive audience, Lady Ranelagh was freer to disagree with the medical establishment and to make bold declarations which she appears to have otherwise restrained herself from expressing. For example, these bold criticisms in letters to her brother are in stark contrast to the subtle disagreements with physicians that she presented in her letters to the Countess of Panmure, where she always began with proper deference to the doctor's opinion before adding her own humble suggestion. Lady Ranelagh was a skilful letter-writer who knew how to manipulate

¹¹¹ *Correspondence of Boyle*, I, pp. 163-65 (p. 165). Letter, Johann Brün [Unmussig] to Robert Boyle, 1 March 1654.

epistolary conventions according to her audience in order to self-fashion an image of medical authority that would allow her a personal and subtle way to disrupt the socio-medical hierarchy. A more wide-ranging study of how early modern women used the letter as an appropriate space for displays and assertions of medical authority would allow us to see whether Lady Ranelagh's use of the genre was typical or not.

Conclusion

Lady Ranelagh's extant holograph letters offer a rich and personal view into her medical knowledge and network. These documents recreate a narrative of medical expertise that would be exceptional for most early modern lay practitioners, but one that is particularly significant because she is a woman. By viewing her recipes and letters together, Lady Ranelagh's complex medical system — comprised of competing theories drawn from a range of medical practitioners — suggests that she had a knowledge and practice of medicine that was exceptional for an early modern woman. Her use of religion as a tool for empowerment and her careful manipulation of the epistolary genre allowed her subtly to subvert the contemporary medical hierarchy while maintaining the respect of the most elite and respected physicians of the seventeenth century.

Conclusion

Lady Ranelagh was an exceptional woman in seventeenth-century England, and managed to combine her superior intellect with piety to win the respect of a wide range of contemporaries. While George Ballard ‘was able to collect very little’ when he tried to include Lady Ranelagh in his *Memoirs of Several Ladies of Great Britain*, this thesis has shown that considerable evidence survives, but it is scattered in the archives of male friends and family members.¹ Once these fragments are pieced together, the life of one of the most important women in early modern England can be recreated.

One of the most striking discoveries is Lady Ranelagh’s very diverse intellectual circle, which ranged from eminent physicians to powerful politicians of various political opinions and religious beliefs. Among natural philosophers, she knew Henry Oldenburg, John Evelyn, Robert Hooke, Sir Kenelm Digby, John Beale, Benjamin Worsley, Walter Pope, and other Fellows of the Royal Society. She solicited medical advice from Dr Thomas Willis, Dr Daniel Coxe, Dr William Quartermain, Dr Thomas Sydenham and Sir Edmund King, in addition to several foreign physicians. She maintained friendships with men who held influential political positions both during the Commonwealth and after the Restoration, including Bulstrode Whitelocke, Lord John Berkeley, and Edward Hyde, Earl of Clarendon. Prominent religious figures in her circle included Gilbert Burnet, Richard Baxter, and William Kiffin. She also maintained relationships with several very different literary figures, including Edmund Waller, John Milton and Andrew Marvell.

¹ George Ballard, *Memoirs of Several Ladies of Great Britain* (Oxford, 1752), p. vii. This quotation was discussed further in ‘Introduction’, above.

This circle of talented individuals reflects both the respect she enjoyed and her eclectic interests and extraordinary intellect. The wide range of political opinions and religious beliefs among these people demonstrates too her ability to maintain friendly relations with people of very different views and backgrounds.

The focus in this thesis on medicine and natural philosophy has enabled a more detailed study of two subjects in which Lady Ranelagh was particularly interested. Chapters 2 and 3 on natural philosophy demonstrated her interest in several branches of the subject, including chymistry, optics, mathematics and horticulture. Most of the evidence dates from her years in the Hartlib Circle, a group in which she was an active correspondent on various topics related to socio-religious reform. The high frequency of occurrences of her name in the Hartlib Papers suggests that she was much more than a patroness of the Circle, and was an active member, accepted as an intellectual equal. While her active interest in natural philosophy does not appear to have been sustained beyond the early 1660s, she maintained relationships with many members of the Royal Society and enjoyed informal interactions in her home with members of Robert Boyle's circle.

Medicine, even more than natural philosophy, was a subject to which Lady Ranelagh dedicated herself, and one she maintained throughout her life. Chapters 4 and 5 explored the receipt books and letters associated with her to establish what type of medicine she practised and endorsed, and to identify her medical circle — both those she treated and those from whom she gained information. When viewed collectively, her recipes and letters endorse a mixture of medical systems, where Galenic doctrines about humoural imbalance and diet rest comfortably alongside new chymical remedies. The

specialist equipment and procedures mentioned in her recipes suggest that she may have practised a sophisticated branch of medicine that was still rare in seventeenth-century England.

Any study of natural philosophy and medicine is strengthened by contextualising the subjects. Religion, gender and social status all need to be considered to assess how each shaped the intellectual climate. Lady Ranelagh's letters constantly draw on religious metaphors and ideas of providence, demonstrating that religion was not only important in shaping her political opinions, but also in how she practised medicine and natural philosophy. Religion is often absent in studies on gender and the history of medicine and science, but the importance it carried for seventeenth-century people cannot be overestimated. For Lady Ranelagh, God was both empowering and omnipotent. This translated into an interesting paradox. She had to consider carefully all socio-political choices, lest they countered God's plan; however, because God informed the decisions she made and the knowledge she gained, she could feel confident in her abilities and critique those with whom she disagreed. Religion must always be part of any branch of intellectual history of the early modern period, especially those focussed on women.

While this thesis has contributed to historical understanding by demonstrating the scope and depth of Lady Ranelagh's natural philosophical and medical activity, it has also contributed to literary scholarship. It makes a strong case for more studies to focus on early modern women's letters, as the genre preferred by most seventeenth-century women, and the one for which evidence survives in the greatest quantity. The manner in which Lady Ranelagh used the epistolary genre carefully, yet powerfully, to assert her medical authority suggests that other gentlewomen may have done the same. I have

argued that we know little about women's medical practice because most studies have focussed primarily on printed texts, though print was the exception for most women. A survey of women's domestic manuscript genres, such as receipt books, letters and diaries, could provide a substantial contribution to our understanding of women's construction of medical authority.

A reflection on chapter 4 (which concerned Lady Ranelagh's medical receipt books) along with chapter 5 (which was about her medical letters) suggests a new area for studies of generic conventions. Though I approached the receipt books and letters with the same questions about medical authority and networks, the different genres produced two very different answers. The receipt books associated with Lady Ranelagh suggested that she collected recipes from a wide range of people, but primarily from those of the lower gentry. However, her letters suggested that most of her medical knowledge was drawn from the most prestigious physicians of her day. Furthermore, while her receipt books only hint at her medical authority, her letters demonstrate that she boldly challenged medical professionals. These differences suggest that genre might shape or distort our understanding of medical networks and authority. One must study both letters and receipt books to gain a more comprehensive understanding of early modern lay practitioners.

Additionally, this thesis has reinforced the need for all historians — literary, feminist, medical and other — to always consider the material properties of any document. By using skills from history of the book scholarship, I have demonstrated that none of the three receipt books associated with Lady Ranelagh are actually in her hand, which changes the way in which we must read each volume. By analysing how a book

was originally compiled, the hand(s) in which it was written, and the authorship notes included within it, we might find that some manuscript sources we use have been misattributed to other people. By employing these bibliographic skills, I have shown that Wellcome Library Western MS 1340 was actually compiled by the Orrery family and is partly written in Lady Orrery's hand, that BL Sloane MS 1367 is a copy from a manuscript originally compiled by Lady Ranelagh, and that Royal Society Library RB/2/8 is probably an experimental notebook of Robert Boyle's. While these are disappointing discoveries for a study on Lady Ranelagh, knowing the correct authorship opens new avenues for scholarly enquiry.

While this thesis has drawn on much new archival research, there are some further documents that could be used to enhance study of Lady Ranelagh. The archives related to Robert Boyle are extensive, and a more comprehensive search of his work diaries, held at the Royal Society Library, might produce references to the siblings' natural philosophic or medical collaboration during the Restoration. A detailed study of his printed works would also be beneficial, as it is still unclear whether Boyle printed some of her recipes without using her name, as Lynette Hunter has suggested.² Additionally, I have only briefly surveyed the archives of Mary Rich, Countess of Warwick, and a full-scale study might provide more detailed information about Lady Ranelagh's medical practice, religious interests and intellectual community.³

One observation that could lead to a further study is the lack of proto-feminist thought in Lady Ranelagh's letters. Literary critics such as Helen Wilcox have

² Lynette Hunter, 'Sisters of the Royal Society: The Circle of Katherine Jones, Lady Ranelagh', in *Women, Science and Medicine: 1500-1700*, ed. by Lynette Hunter and Sarah Hutton (Stroud, Gloucestershire: Sutton Publishing, 1997), pp. 178-197.

³ BL Add. MS 27356, 'Occasional Meditations'; BL Add. MSS 27351-55, 5 volumes of 'Diaries'; and BL Add. MS 27357, which includes some autobiographical reflections.

convincingly revealed the seeds of feminist thought in much early modern women's writing in various genres, ranging from poems and plays to political pamphlets.⁴ Women writers often explicitly invoked their gender when expressing their desire to write, whether they were critiquing the poor education of girls or apologising for their bold decision to break from convention. However, Lady Ranelagh's lack of gender analysis and her critique of Margaret Cavendish's behaviour suggest that she was not among the proto-feminist contingent identified by literary scholars. This raises several questions: was this an essentially literary phenomenon? Would a wider search of women's practice of natural philosophy and medicine produce evidence of a proto-feminist consciousness? It might be that natural philosophy evolved in a context that was particularly hostile to women's ideas of piety, presenting a further obstacle to their writing about and practising the subject. They could explicitly subvert gender conventions and face ridicule (as in the case of Margaret Cavendish), or they could participate in a much more limited fashion and preserve their reputations. If presented with such a choice, it is clear why Lady Ranelagh, and other elite Englishwomen, would have chosen the more respectable option and why there is little indication of proto-feminist thought in seventeenth-century women's writings about natural philosophy and medicine.

Finally, while Lady Ranelagh appears to have been an extraordinary woman, the difficulty in recreating her life suggests that there may have been other early modern Englishwomen with similar skills in natural philosophy and medicine whose lives we have yet to recover. For example, there are many tantalisingly brief references in the Hartlib Papers to women such as Lady Joan Barrington, with whom Hartlib discussed

⁴ Helen Wilcox, 'Feminist Criticism in the Renaissance and Seventeenth Century', in *A History of Feminist Literary Criticism*, ed. by Gill Plain and Susan Sellers (Cambridge: Cambridge University Press, 2007), pp. 27-44.

‘Chymical subjects’, and ‘Mrs Ogilby ... A rare Chymical Gentlewoman’.⁵ These references suggest that other women maintained public reputations as medical and natural philosophical authorities, but that their choice to write in ephemeral manuscript genres meant that they have been erased from the historical record. As time-consuming and frustrating as it may be, feminist scholars need to continue searching the archives of male family and friends. It is only then that we might recover the lives of more intellectual Englishwomen, as has been demonstrated by this study of ‘the Incomparable Lady Ranelagh’.⁶

⁵ For Lady Joan Barrington, see HP 7/49/1A, Copy Letter, Hartlib to Lady Barrington, 21 August 1640. For Mrs Ogilby, see HP 29/5/42B. Ephemerides 1655, Part 3.

⁶ Kathleen M. Lynch, ‘The Incomparable Lady Ranelagh’, in *Of Books and Humankind: Essays and Poems Presented to Bonamy Dobrée*, ed. by John Butt (London: Routledge, 1964), pp. 25-35.

Appendix A-1: Boyle Family Genealogy

The Boyle Family:

Children of Roger Boyle, 1st Earl of Cork (1566-1643) and his second wife Catherine Fenton (c.1588-c.1630)

Name:	Dates:	Married:	Titles:
Roger	1 Aug 1606- 1615	Unmarried — Died at Age 9	N/A
Alice	20 Mar 1608- 23 Mar 1666	21 July 1621 to David Barry (d.1642), Remarried to John Barry	Countess of Barrymore (Feb 1628)
Sarah	29 Mar 1609- 14 July 1633	1621 to Sir Thomas Moore, Remarried to Robert Digby (d. 1642)	Lady Moore 1 st Baroness Digby
Lettice	25 Apr 1610- c. April 1643	25 July 1629 to George Goring (1608-1657)	Baroness Goring
Joan	14 June 1611- 1656	15 Aug 1630 to George Fitzgerald (c.1612-1660)	16 th Countess of Kildare (1620)
Richard	20 Oct 1612- 15 Jan 1698	3 July 1633 or 34 to Elizabeth Clifford (1613-1691)	Viscount Dungarvan (Oct 1620) 2 nd Earl of Cork (1643) Baron Clifford (Nov 1644) 1 st Earl of Burlington (1665)

Katherine	22 Mar 1615- 23 Dec 1691	4 April 1630 to Arthur Jones (d. 1670)	2 nd Viscountess Ranelagh (1643)
Geoffrey	10 Apr 1616- 1617	Unmarried — Died as an infant	N/A
Dorothy	30 Dec 1617- 26 March 1668	1632 to Sir Arthur Loftus Remarried to Col. Gilbert Talbot	Lady Loftus Lady Talbot
Lewis	23 May 1619- 3 Sep 1642	1639 to Elizabeth Fielding	Viscount Kinalmeaky (1628)
Roger	25 April 1621- 16 Oct 1679	27 Jan 1641 to Margaret Howard (1623-1689)	Baron Broghill (Feb 1628) 1 st Earl of Orrery (Sep 1660)
Francis	25 June 1623- 19 April 1699	1638 or 39 to Elizabeth Killigrew (1622-1681)	1 st Viscount of Shannon (1660)
Mary	11 Nov 1625- 12 April 1678	12 July 1641 to Charles Rich (1616-1673)	4 th Countess of Warwick (1659)
Robert	25 Jan 1627- 31 Dec 1691	Unmarried	Known as ‘the Honourable Robert Boyle’
Margaret	30 Apr 1629- 1637	Unmarried — Died at Age 8	N/A

Appendix B-1: Portrait of Katherine Jones, Lady Ranelagh



Photograph of part of a painting showing Lady Ranelagh and Elizabeth, Countess of Burlington. Property of the Trustees of the Chatsworth Settlement, Bolton Hall, Bolton Abbey.

Appendix C-1: Letter in Lady Ranelagh's Hand, dated 1659

some through y^e partition whereof he had made a hole by w^{ch} hee
could looke into his master working mine, who had his usual house
came thither & fel to worke Higgins seeing him at y^e while prepar-
ing his silver to receive y^e ducture & y^e goe to a box he had & there
in a little paper w^{ch} he opened he saw y^e Powder w^{ch} he sayd was
y^e glorious thing he ever saw, & y^e his Master going about
something out of y^e view of his peeping place he to assist
himselfe thought to take y^e help of a stool to stand higher w^{ch}
attempting to take wthout making a noyse his fete slipped & he
tumbled downe & in y^e fall broke 2 of his ribs making all
noyse enough to Alarum his Jealous Master who made all
y^e hast he could to gather up his Instrum^{ts} & to put y^e into
his concealed place w^{ch} whilst he was a doing Higgin
fret out to his Hostess who had him from his Master &
who presently suspected it was he & swore he would kill
her if she discovered him not & him if he could get him
yet she proved true to him, & as soone as he was released
he went to Paris & there accused & be closely followed
his Master y^t he had him seized & some of his goods
was found in his Pockets, made into Portugall peeces
of gold it was tryed & found perfectly good.
After this he quitted France & went into Spain &
in his coming from thence againe was as Higgins
told me he heard shipwrecked & in seeking to
save him selfe by swimming was dashed against
a rock & soe died, Ranelagh

Part of a letter from Lady Ranelagh to Hartlib, with Hartlib's corrections. 5 April 1659.
Yale University, Beinecke Rare Book and Manuscript Library, Osborn MS 16789.

Appendix C-2: Letter in Lady Ranelagh's hand, dated 1665

... fees y^r 2^d of y^e 1st [1665]
Though several of y^r letters have my self
told me of y^r resolution to quitte Ireland about
this time. The uncertaintie wth continueth
in humane affairs makes me think it is probable
y^t y^e may be stayed there beyond y^e purpose. That
I venture to adrese this to y^e theather to let y^e
know I have now for a long time muste y^e satis-
faction of hearing from y^e w^{ch} gives me some
fear of y^e because we are so beset in Eng^d
wth occasions y^t excite y^t passion. By y^e
dreadful spreading of y^t infection from London
y^t is there more. Distracte y^e any plague
enor was before. y^e know a Lent of y^e did
often tell y^e we were by our praiching
making some terrible Judgmental most
inevitable to us. & I doubt y^e will find y^e
opinion too sadly confirmed by effects

Part of a letter from Lady Ranelagh to her brother, Richard, Earl of Cork and Burlington.
2 September [1665].
British Library, Add. MS 75354, fol. 50r.

Appendix C-3: Letter in Lady Ranelagh's Hand, dated 1690

I am really confounded to find my
self againe prevented by y^r obligingne
in affording me y^e hon of a second letter
from y^e before I could take y^e libertie
y^e thereby seemed to allow me to inquire
by this way after y^e health wth y^e
Edward King assured me was much
increased by y^e waters & would bee
more so by y^e continuance of y^e &
y^e information added to my former

Part of a letter from Lady Ranelagh to the Countess of Panmure, 31 July 1690.
National Archives of Scotland, GD 45/14/237/1.

Appendix D-1: Letter in Margaret Boyle, Lady Orrery's Hand,
dated 1674

VII Balmores Sept 1st 1674
442
1

My Ld

The Last night my Ld had ye honour of
 receiving a letter from yr Exc^{ty}, for
 which hee returns you his most humble
 acknowledgement, and is extremely troubled
 hee is not in condition of doing it in his
 own hand, hee being most extremely ill
 and full of paine above him by a violent
 cold, in two or 3 days hee expects Dr^r
 Halls Reev, and then hee will happen him
 to attend yr Exc^{ty}s a bout what yr
 letter Commands, and hopes in a litle
 time to be able to wright him selfe
 and then will not faile to pay you
 that Duty, my Ld, it selfe I hope will
 plead for my pardon, for giving yr
 Exc^{ty}s this trouble, which I shall happen
 to put an End to, when I have assured
 you I am

My Ld
 yr most Sathfull humble
 Serv^t M. OTTELY.

I write my Lady Essex a l^t
 & shal^d returne to yr L^ds

Letter from Lady Orrery to Arthur Capel, Earl of Essex, 1 September 1674.
 British Library, Stowe MS 206, fol. 1r.

Appendix E-1: List of Attributions in British Library Sloane MS 1367

Title of Recipe	Source of Recipe	Folio
My Lady Barringtons rare Balsum	‘My Lady Barrington’ -Lady Joan Barrington (c.1558-1641)	2r
The Lucatellus Balsam	‘My L. Reynolds’ -Maybe: Lady Priscilla Reynolds (1626-91)	2v
Against the Scurvy	‘My Lady Leysters Way’ -Maybe: Dorothy Sydney (née Percy) (c.1598-1659)	5r
Dr Burges Souveraigne Receipt ag ^t the Plague	‘Dr Burges’ -Printed source. For example, see: John French, <i>The Art of Distillation</i> (London, 1653), p. 53. Hannah Woolley, <i>The Accomplisht Ladys Delight</i> (London, 1675), p. 40.	5v
A Sceare Cloth for ones Breasts	‘Ms Crooks’	5v-6r
For a Cough	‘This from My Lord Canter.’	12v
For a Rhume	‘Dr Prigeons receipt’ -Maybe: Dr Francis Prujean (c.1597-1666)	12v
The wound oyle, for any green wound	‘Sr ffrancis Baringtons Lady’ - Lady Joan Barrington (c.1558-1641)	16r-v
For the Stone	‘Ld Devons’	17v
To breake a sore Breast if it be need	‘Ms Joyces Ointm ^t ’	17v
For a sore breast	‘Dr Swallows’	18v
For deaffnesse	‘Sr K. Dighby’ -Sir Kenelm Digby (1603-65)	19v
For a Consumption	‘Sr Ken. Dighby’ -Sir Kenelm Digby (1603-65)	19v-20r
For a Cough	‘Sr K. Dighby’ -Sir Kenelm Digby (1603-65)	20r

The Gout water of the E. of Staffords	'E. of Stafford' -Probably: Thomas Wentworth, first Earl of Stratford (1593-1641)	20v
Gerards Powder for to conserve & restore the sight	'Gerard' -Maybe Printed Source: John Gerard, <i>The Herball</i> (1597)	26r
For Deafnesse	'Ms [Hamlet?]'	26r
for the Whites	Possible attribution, but unclear. [M. Witherdin?]	30r
^An ointment for^ For burning	'receipt of Cap ^t . Willis' -Thomas Willis (1621-75)	30v
ffor Bleeding	'Cap ^t . Willis' -Thomas Willis (1621-75)	30v
Cap^t ^Dr^ Willis receipts [NB: 40 recipes in this section, ends 38v]	'Dr Willis' -Thomas Willis (1621-75)	32v
Dr Chaymes Oyle NB: In Willis's section	'Dr Chaymes Oyle' NB: In section attributed to Thomas Willis's recipes	35r
For the Scurvy	'Ms. Deane'	39r
to fasten e whiten ye Theeth	'Ms. Mary Manner'	39r
Or [another way to fasten and whiten teeth]	'Dr Clary'	39r
For an ague	'Ms Crackmile'	39v
for the Scurvy	'Ms [Sheppard?]'	42r
An other ^way^ [for treating scurvy] of Ms. Royall	'Ms. Royall'	42r
Harveys Cordiall restorative	'Harvey' Maybe: William Harvey (1578-1657)	42v
Harveys Julep ag ^t to extinguish ye great heat e abate immoderate thirst of ye patient	'Harvey' Maybe: William Harvey (1578-1657)	42v
Harveys Dormitive	'Harvey' Maybe: William Harvey (1578-1657)	42v

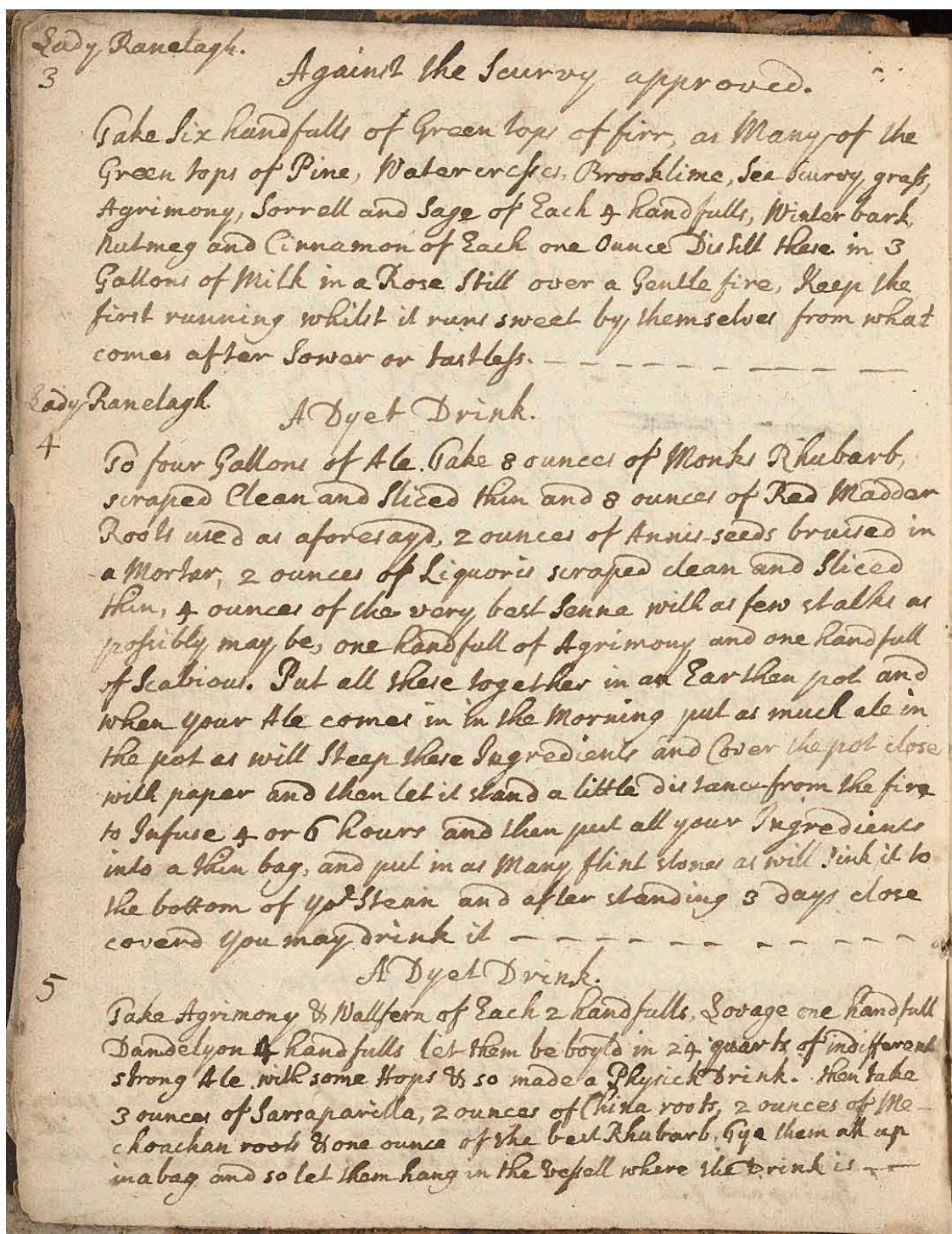
The Oyl of Tabaco for wounds, scabs, itch.	'Culpepers' - Could be Sir Cheney Culpeper (1601-1663), but it is probably from a printed book by Nicholas Culpeper, as later recipes by Culpeper give page numbers. See fols. 45v-46r & 50v.	45r
For broken bones wounds outward e inward	'Culpeper high commends it.' -Probably Printed Source: book by Nicholas Culpeper	45r
For inveterate Scabs, itch e leprosie	'says Culpeper' -Probably Printed Source: book by Nicholas Culpeper	45r
For ye Gout	'Dr Butlers rect. given to Culpeper. 41.' -Probably Printed Source: book by Nicholas Culpeper	45v
For Sore throat or Ulcers there	'Culp.' -Probably Printed Source: book by Nicholas Culpeper	46r
'Devills [bile?]	- 'rightly commended also by Culpeper. (54)' -Probably Printed Source: book by Nicholas Culpeper	46r
For convulsion fitts of children	'Dr [Bacon?]	46r
To cure a sore leg	'Ms [Treher?]	46r
An other way [Refers to 'For paine & weaknesse of the back']	'Ms [Treher?]	46v
A diet drink	'from Ms Welsh'	46v
Headache	'Mr Bruiser'	47r
To cure ye immoderate red flux of a woman	'Sr Wm. Goodwins Lady'	48v
for headache, a purge	'Mr Bruiser' and 'Dr [Laben?]	48v
For Wounds, broken bones black e blew markes of blows	'Culp. 16.' -Probably Printed Source: book by Nicholas Culpeper	50v
For ye Scurvy in ye mo[rning]	'Probatiss Ms [Aldrick?]	51r
ffor the stone, retention of urin and wind colick	'[Acbillier?] says' -Probably Printed Source: Unknown source, but page numbers throughout.	52r

Stone Colick	'Ms [Alton?]'	52r
for ye Stone colick	'Ms [Wesh?]'	52r
An Exc ^t glister for ye stone cholick	'Mr [Acbillier?]' -Probably Printed Source. See note above for folio 52r.	52v
for ye stone	'Dr Roleman'	52v
for ye stone	'Mr Hines' and includes a note with alternative versions by 'Mr Greene' and 'Mr [Barttel?]' -Mr Green was the apothecary in Great Saint Bartholemew	52v
Deafnesse	'Ms. Brock.'	53r
for loosnesse	'Cap ^t Willis' -Thomas Willis (1621-75)	53v
Chilblain	'Dighby' -Sir Kenelm Digby (1603-65)	54v
Redface	Mr [Joan?]	54v
Corn	'C. Willis' and alternative version by 'a German shoo-makers wife' -'C.' referring to 'Captain', and therefore: Thomas Willis (1621-75)	55r
Redface	'Ms _____' but reference later says 'he', so not sure if this would have been a male or female source.	55r
Rheume or cold	'Prob. Mr [Lindenow?]'	55v
Pulvis deargentary	'Dr [Cassius?]	55v
Latin notes (possibly recipes) just before index	3 of these paragraphs/recipes have 'Kircher' named at the end.	77r

Hand One (Lady Orrery)

53 To make st of Roses my brother 19
Robert Boyls way
Take of Damask Roses both Leaves and 1581
seeds for ye seeds yeadd ye most oyle what
quantity you please and 20 or many leaves
as you can possibly grasp with y^r hand putt of
much salt as you can cover in y^r hand & in
a ston mortar beat them very well then
take this mass out of y^e mortar and put
in the like proportion of salt & Roses and
beat small as the other and so doe till
you have the quantity you please then
take them all and putt them in 20
some well glazed earthen pott and 20
every Bushell of Roses you have salted
power a quart of beards wher in the
quantity of a walnut of leaves hath bene
first detolned this may be stiled in Aug: or
sept: in a Limbeck and will yeadd odoriferous
watter with a spirit swimming at the top
of it of a snow white color which must
not be take off with any thing of Iron
or Brasse but with some Ivory or some
other inodorous ~~thing~~ matter

Hand Two



Hand Three

6
+ ✓ Lady Barkshers water for
a sore brest

4

take 4 ounces of Lapis Calaminaris in
a peece burn ~~it~~ red hott in a charcole
or a uery cleare fier & quench it in a pint
of white wine 9 times red hot, then
take 2 ounces of Lapis ^{alias Lapis Sulphur} sturions, make
it red hot in a creuse 3 times & quench
it in a pynt of red rose water then
Beate these stones all together to a
powder and put the powder & the
water up in a stone bottle, shaking
it every day, for 9 days together
once a day, then take clean linen
raggs and aply it to the brest twice
a day & every time you aply it
you must have fresh raggs, not
warm y^e water you will take noe
cold by it

Appendix E-6: Wellcome Library, Western MS 1340, fol. 142r:
Scribal Hand (either Hand Two or Hand Four)

142

For the Gout
To the Right Hon.^{ble} Roger Boyle Earl of Orrery
My Lord.

I shall not cloy yo^r Lo^{rdship} with any Physiolog^{ical} & 656.
Discourse of the Nature, Causes, Diagnosticks or Prognosticks of y^e
Several Species of the Gout, as having done it in yo^r Lo^{rdship}s presence
before but fall upon the Therapeutical Part consisting of
Diet and Cure.

The Aire is first to be considered which if foggy
and moist is to be corrected, but yo^r Lo^{rdship}s house as much as any
here answers that Suspect.

The Drinks forbidden are all Generous Wines, and all in any
Except Lucian saith the Podagra and Chiragra are the sons of
Bacchus and Venus, therefore Bacchus and Venus to be wholly ab-
stained or most sparingly Used.

What Wine may be allowed is to be medicated after the
Manner of Paracelsus etc.

Drink allowed in my Method of Curation Physick dayes ex-
cepted is a Diet Drink

For yo^r Lo^{rdship} I shall Compose it thus.

R^x of China Roots choicely Elected ℥i and half.
Sarsaparilla prepared ℥ij. Sassafras Wood cut Small ℥i.
Rasped Hartshorn and Ivory of Each ℥ij. of red Sanders ℥i.
Manus Christi perlata ℥i. of Eupatory a handfull.

The Ingredients must infuse in four pottles of Water twenty
four hours on a Small Fire, then after a quarter of an hour
boyl^{ing} to be strained, the Colature is to run throu Nutmeg
and

Appendix E-7: Royal Society Library, MS RB 2/8, fol. 7v:

Hand attributed to (but not that of) Lady Ranelagh

Beane meale 2 ounces of Barlymeale. $\mathfrak{z}\text{ij}$ grated bread $\mathfrak{z}\text{ij}$
Boyle these in a pint of new milke wth $\mathfrak{z}\text{ij}$ of best
flowers, two drachmes of clove flowers & $\mathfrak{z}\text{ss}$ of
milk flowers grossly powdered. adding a few red roses is
the considerⁿ. A Cataplasme, whereof beens taken
of the fine part $\mathfrak{z}\text{ij}$ of oyle of Roses & $\mathfrak{z}\text{ss}$ of
an egg. If any hardness should remaine then this
cataplasme may be applyed wth a thinner piece of
a bladder. Take of Beane meale $\mathfrak{z}\text{ij}$ of the best honey
 $\mathfrak{z}\text{ss}$ of wine vinegar $\frac{1}{2}$ pint Boyle these together to the
consistence of a Cataplasme & apply it to the part &
twice a day. If either of these Cataplasms cannot be
conveniently be had this following plaister may be used in
steed of them. Take of Diapalma persian^a $\mathfrak{z}\text{ij}$ Oyle of

Bibliography

Primary Sources:

Manuscripts:

Armagh Public Library, Northern Ireland

Collection of State Papers Connected with Meath, 3 Vols, MS 26544, letter numbers 10, 17, 20, & 21, Letters from Lady Ranelagh to Bishop Anthony Dopping

Beinecke Library, Yale University

Osborn MS 12473, Letter from Lady Ranelagh to Countess of Burlington
Osborn MS 16789, Letters from Lady Ranelagh to Samuel Hartlib

Bodleian Library, Oxford University

Carte MS 30, fols. 484-86. Letter, Edward Hyde to Marquis of Ormonde, 25 Oct. 1659
Clarendon State Papers, vol. 23, fols. 113-15, Letter from Lady Ranelagh to Edward Hyde, 3 March 1644
Clarendon State Papers, vol. 78, fols. 230-31, Letter from Lady Ranelagh to Edward Hyde, Earl of Clarendon
Clarendon State Papers, vol. 79, fols. 73-74 & 269-72, Letters from Lady Ranelagh to Edward Hyde, Earl of Clarendon
MSS Add, A. 191, fol. 113, Letter from Lady Ranelagh to Bishop Gilbert Burnet

British Library, London

Add. MS 4229, fol. 58. Letter from John Evelyn to William Wotton, 29 March 1696
Add. MS 4292, fols. 278-79, Letter from Lady Ranelagh to Robert Boyle, 11 September 1677
Add. MS 4293, Robert Boyle, Work Diary from 1666
Add. MS 4365, fol. 7. Letter, John Dury to John Pell, 28 May/7 June 1678.
Add. MS 15948, John Evelyn MSS
Add. MS 17017, Letter from Lady Ranelagh to Laurence Hyde, 23 November [1676]
Add. MSS 27351-55, Diaries of Mary Rich, Countess of Warwick. 5 vols.
Add. MS 27356, 'Occasional Meditations' of Mary Rich, Countess of Warwick.
Add. MS 27357, Autobiographical Reflections of Mary Rich, Countess of Warwick
Add. MS 45196, Anne Glydd's receipt book
Add. MS 45718, Elizabeth Freke's receipt book
Add. MS 46932, Copy Letter from Lady Ranelagh to Lord Broghill, 9 Feb. 1650
Add. MS 72883-84, Papers of William Petty
Add. MS 75354, fols. 50-119, Letters from Lady Ranelagh to the Earl of Cork and Burlington
Add. MS 75355, Letters to the Earl and Countess of Cork and Burlington

Add. MS 75356, unpaginated. Letter from Lord Falkland to Lady Dungarvan, 20 August [1642]

Egerton MS 2197, Receipts Collected by Elizabeth Digby

Egerton MS 3330, fols. 14-18, Notes of Coventicles &c. in Westminster &c., July 1676

Sloane MS 417, fol. 213, Letter from Samuel Hartlib to Adolf Tassius, 10 August 1638

Sloane MS 548, fol. 18, Copy of John Beale's 'Perspective Tubes and Telescopes'

Sloane MS 649, fols. 203-05, Dorothy Moore to [Lady Ranelagh?], 'Of the Education of Girles'

Sloane MS 1367, My Lady Rennelagh's Choice Receipts

Sloane MS 4229, fol. 68, Robert Boyle's autobiographical fragment

Stowe MS 206, fols. 1, 15, 61, 107-108, 117-18, Letters from Lady Orrey to Arthur Capel, Earl of Essex, 1674

Stowe MS 207, fols. 297-98, 318-19, Letters from Lady Orrery to Arthur Capel, Earl of Essex, 1675

Chatsworth House, Derbyshire

Cork MSS, Box 21, Boyle Family Letters

Cork MSS, Box 30, Boyle Family Letters

Cork MSS, Box 31, Boyle Family Letters

Cork MSS, Box 33, Boyle Family Letters

Cork MSS, Miscellaneous Box 1, Diaries of Lord Burlington, 3 vols.

Cork MSS, Miscellaneous Box 5, Journal of Elizabeth (Clifford), Lady Burlington, 1650s-1688

Harvey Cushing/John Hay Whitney Medical Library, Yale University

Uncatalogued Letter, Lady Ranelagh to Earl of Clarendon

National Archives (formerly Public Record Office), London

E 192/14/5, Letter from Lady Ranelagh to Robert Thornhill

E 192/14/11, Letter from Lady Ranelagh to Robert Thornhill

SP 3/30, Letter from Lady Ranelagh to Daniel Finch, Earl of Nottingham

SP 29/197, Letter from Lady Ranelagh to Joseph Williamson

SP 29/230, Letter from Lady Ranelagh to Joseph Williamson

SP 29/251B, Letter from Lady Ranelagh to Joseph Williamson

TS 23/1/43, fols. 62-63, Copy Letter from Lady Ranelagh to Elizabeth, Queen of Bohemia

National Archives of Ireland, Dublin

Ormonde MS 2383 f 299 (4952), Lady Ranelagh to R. Fitzgerald, 4 March 1679

Uncatalogued Letter from Lady Ranelagh to Roger Boyle, Earl of Cork, 26 October 1642

National Archives of Scotland, Edinburgh

GD 45/14/237/1-5, Letters from Lady Ranelagh to the Countess of Panmure

GD 406/1/3797, Letter from Lady Ranelagh to the Duchess of Hamilton, 6 August 1690

National Art Library, Victoria and Albert Museum, London

Forster MS 454, Letter 74, 40/1, fols. 74-75, Letter from Lady Ranelagh to Elizabeth,
Queen of Bohemia

Royal College of Surgeons, London

MS 0030, Elizabeth Isham MS recipes 1659[?]

Royal Society Library, London

MS/1, fols. 190-94, Oldenburg *Liber Epistolari*, 'Ex. Litt. M. Ra.'

RB/1/14/4, fols. 27-42, Lady Ranelagh's 'Discourse Concerning the Plague'

RB/2/8, Medical commonplace Book used by Boyle and Lady Ranelagh

RB/3/1/23-24, Letters from John Beale to Lady Ranelagh, September 1660

RB/3/5/6-15, Letters from Lady Ranelagh to Robert Boyle and John Eliot

RB/3/6/4, Letter from [Lady Ranelagh?] to [Samuel Hartlib?], 3 April 1658

University of Sheffield Library, Sheffield

Hartlib Papers. Digitised version consulted:

The Hartlib Papers: A Complete Text and Image Database of the Papers of Samuel Hartlib (c. 1600-1662), 2nd edn, 2 CD-ROMs, (hriOnline, University of Sheffield, 2002).

Wellcome Library, London

Western MS 213, Mrs. Corylon's Receipt Book.

Western MS 1340, Boyle Family Receipt Book

Western MS 2844, Mary Hodges's Receipt Book

Western MS 3768, Bridget Parker's Receipt Book

Western MS 4887, James Tyrrell, Collection of holograph medical receipts

West Sussex Record Office, Chichester

Petworth House, Orrery MS 13219, Letters from Lady Ranelagh to Margaret Boyle,
Countess of Orrery

Books Printed before 1800:

Anon., *A Choice Manuall of Rare and Select Secrets* (London, 1653)

- Anon., *Madam, although my former freedom* (London, 1645)
- Anon., *Natura Exenterata, Or Nature Unbowelled by the Most Exquisite Anatomizers of Her* (London, 1655)
- Ballard, George, *Memoirs of Several Ladies of Great Britain* (Oxford, 1752)
- Barlow, Thomas, *The Genuine Remains of that Learned Prelate Dr. Thomas Barlow* (London: Dunton, 1693)
- Boyle, Robert, *Medicinal Experiments or a Collection of Choice Remedies for the most part Simple and Easily Prepared*, 3 vols (London, 1692-94)
- , *Occasional Reflections Upon Several Subjects* (London, 1665)
- , *The Works of the Honourable Robert Boyle*, ed. by Thomas Birch, 6 vols (London, 1744)
- Burnet, Gilbert, *A Sermon Preached at the Funeral of the Honorable Robert Boyle* (London, 1692)
- Cavendish, Margaret, *Worlds Olio* (London, 1655)
- Digby, Kenelm, *Chymical Secrets, And Rare Experiments in Physick & Philosophy* (London, 1683)
- French, John, *The Art of Distillation* (London, 1653)
- Fuller, Francis, M.A., *Medicina gymnastica: Or, a Treatise Concerning the Power of Exercise, with Respect to the Animal Oeconomy* (London: 1705)
- Hyde, Edward, *The History of the Rebellion and Civil Wars in England*, 3 vols (Oxford: 1702-04)
- , *State Papers Collected by Edward, Earl of Clarendon*, 3 vols (Oxford: Clarendon, 1767-86)
- Lawson, William, *The Countrie Housewives Garden, Containing Rules for Hearbes of common use* (London, 1617)
- Markham, Gervase, *The English Housewife* (London 1615, repr. 1631)
- Milton, John, *Epistolarum Familiarium Liber Unus* (London, 1674)
- Pechey, John, *The Compleat Herbal of Physical Plants Containing all such English and foreign herbs, shrubs and trees as are used in physick and surgery* (London, 1694)

- Robertson, William, *A Gate or Door to the Holy Tongue, Opened in English* (London, 1653)
- Russell, Rachel, *The Letters of Lady Rachel Russell: From the Manuscript in the Library at Wooburn Abbey* (London: Dilly, 1792)
- Sharp, Jane, *The Midwives Book. Or the whole Art of Midwifry Discovered* (London, 1671)
- Thurloe, John, *A Collection of the State Papers of John Thurloe, Esq.*, ed. by Thomas Birch, 7 vols (London, 1752)
- Trye, Mary, *Medicatrix, Or The Woman-Physician* (London, 1675)
- Van Helmont, Francis Mercury, *Oriatricke, Or, Physick Refined* (London, 1662)
- W.M., *The Queens Closet Opened* (London, 1659)
- Willis, Thomas, *Pharmaceutice Rationalis (Part I): Or an exercitation of the operations of medicines in humane bodies* (London, 1684)
- Woolley, Hannah, *The Accomplisht Ladys Delight* (London, 1675)

Books Printed after 1800:

- Anon., *Calendar of the Lismore Manuscripts with Index of Matters A.D. 1396-1774* (private publication: no year)
- Anon., *Calendar of the Manuscripts of the Marquess of Ormonde. K.P.*, 8 vols (London: His Majesty's Stationary Office, 1895-1920)
- Ben Israel, Menasseh, *Menasseh ben Israel, The Hope of Israel: The English Translation by Moses Wall, 1652*, ed. by Henry Méchoulan and Gérard Nahon (Oxford: Oxford University Press, 1987)
- Boyle, Robert, *The Correspondence of Robert Boyle*, ed. by Michael Hunter, Antonio Clericuzio and Lawrence M. Principe, 6 vols (London: Pickering & Chatto, 2001)
- , *The Early Essays and Ethics of Robert Boyle*, ed. by John T. Harwood, (Carbondale: Southern Illinois UP, 1991)
- , *The Workdiaries of Robert Boyle*, ed. by Centre for Editing Lives and Letters, <http://www.livesandletters.ac.uk/wd/index.html>

- Cody, Lisa Forman, ed., *Writings on Medicine: The Early Modern Englishwoman*, Series 2, Vol. 4 (Aldershot, Hants: Ashgate, 2002)
- Conway, Anne, *The Conway Letters*, ed. by Marjorie Hope Nicolson, rev. by Sarah Hutton (Oxford: Oxford University Press, 1992)
- Culpeper, Sir Cheney, 'The Letters of Sir Cheney Culpeper (1641-1657)', in *Seventeenth-Century Political and Financial Papers*, Camden Miscellany XXXIII, 5th Series, Vol. 7, ed. by M.J. Braddick, and M. Greengrass (Royal Historical Society: London, 1996), pp. 105-402
- Evelyn, John, *The Diary of John Evelyn*, ed. by E.S. De Beer, 6 vols (Oxford: Clarendon Press, 1951; repr. 2000)
- , *Elysium Britannicum, or The Royal Gardens*, ed. by John E. Ingram (Philadelphia: University of Pennsylvania Press, 2001)
- Gould, George, ed., *Documents Relating to the Settlement of the Church of England by the Act of Uniformity of 1662* (London: Kent, 1862)
- Greer, Germaine, et al, eds., *Kissing the Rod: An Anthology of Seventeenth-Century Women's Verse* (London: Virago, 1988)
- Grosart, Alexander Balloch, ed., *The Lismore Papers*, 2 Series, 10 vols, (London, 1886-88)
- Hoby, Margaret, *The Private Life of an Elizabethan Lady: The Diary of Lady Margaret Hoby, 1599-160*, ed. by Joanna Moody (Stroud, Gloucestershire: Sutton, 1998)
- Hooke, Robert, *The Diary of Robert Hooke 1672-1680*, ed. by Henry W. Robinson and Walter Adams (London: Wykeham, 1968)
- Isham, Elizabeth, 'Elizabeth Isham's diary', ed. by *Constructing Elizabeth Isham*, <<http://www2.warwick.ac.uk/fac/arts/ren/projects/isham>>
- Markham, Gervase, *The English Housewife*, ed. by Michael R. Best (Kingston and Montreal: McGill-Queen's University Press, 1986)
- Marvell, Andrew, *The Poems of Andrew Marvell*, ed. by Nigel Smith (London: Pearson Longman, 2003)
- Millman, Jill Seal, and Gillian Wright, eds., *Early Modern Women's Manuscript Poetry* (Manchester: Manchester University Press, 2005)

- Moore, Dorothy, *The Letters of Dorothy Moore, 1612-64: The Friendships, Marriage, and Intellectual Life of a Seventeenth-Century Woman*, ed. by Lynette Hunter (Aldershot, Hants: Ashgate, 2004)
- Oldenburg, Henry, *The Correspondence of Henry Oldenburg*, ed. by A. Rupert Hall and Marie Boas Hall, 13 vols (Madison: University of Wisconsin Press, 1965-86)
- Otten, Charlotte F., ed., *English Women's Voices 1540-1700* (Miami: Florida International University Press, 1991)
- Rich, Mary, *Autobiography of Lady Warwick*, ed. by T. Crofton Croker (London: Percy Society, 1848)
- Ruland, Martin, *A Lexicon of Alchemy* (Frankfurt: 1612), trans. by A. E. Waite, (York Beach, ME: Samuel Weiser, Inc., 1984)
- Searle, Arthur, ed., *Barrington Family Letters 1628-1632*, Camden Society Fourth Series, Vol. 28 (London: Royal Historical Society, 1983)
- Singer, Samuel Weller, ed., *The Correspondence of Henry Hyde, Earl of Clarendon, and of this Brother, Laurence Hyde, Earl of Rochester; with the Diary of Lord Clarendon from 1687-1690*, 2 vols (London: Colburn, 1828)
- Spiller, Elizabeth, ed., *Seventeenth-Century English Recipe Books: The Early Modern Englishwoman*, Series 3, Part 3, Vol. 3, (Aldershot, Hants: Ashgate, 2008)
- Verney, Frances Parthenope, ed., *Memoirs of the Verney Family*, 4 vols (London: Longmans, 1892)
- Whitelocke, Bulstrode, *The Diary of Bulstrode Whitelocke 1605-1675*, ed. by Ruth Spalding (Oxford: Oxford University Press, 1990)
- Worthington, John, *The Diary and Correspondence of Dr John Worthington*, 3 vols, ed. by James Crossley (Manchester, 1847-86)

Secondary Sources:

- Abraham, Lyndy, *A Dictionary of Alchemical Imagery* (Cambridge: Cambridge University Press, 1998)
- Albala, Ken, *Food in Early Modern Europe* (London: Greenwood Press, 2003)
- Anon., 'The "Cecil" Glossary of *Materia Medica* and Medical Terminology'. The Health of the Cecils (c.1550 - c.1660). Royal Holloway, University of London, Department of History <<http://www.rhul.ac.uk/History/Research/cecils/medica/>>

- Archer, Jayne, 'A "Perfect Circle"? Alchemy in the Poetry of Hester Pulter', *Literature Compass*, 2 (2005), 1-14
- , 'The Queen's Arcanum: Authority and Authorship in *The Queens Closet Opened* (1655)', *Renaissance Journal*, 1.6 (2002), 14-26
- Armstrong, Robert, and Tadhg Ó hAnnracháin, eds., *Community in Early Modern Ireland* (Dublin: Four Courts Press 2006)
- Avery, Gillian, and Kimberley Reynolds, eds., *Representations of Childhood Death* (Basingstoke: Macmillan, 2000)
- Avramov, Iordan, 'An Apprenticeship in Scientific Communication: The Early Correspondence of Henry Oldenburg (1656-63)' in *Notes and Records of the Royal Society of London*, 53 (1999), pp. 187-201
- Barnard, T.C., 'The Hartlib Circle and the Cult and Culture of Improvement in Ireland', in *Samuel Hartlib and Universal Reformation*, ed. by Mark Greengrass, et al, pp. 281-97
- , 'Miles Symner and the New Learning in Seventeenth-Century Ireland', *Journal of the Royal Society of Antiquaries of Ireland*, 102 (1972), 129-42
- Batten, J. Minton, *John Dury: Advocate of Christian Reunion* (Chicago: University of Chicago Press, 1944)
- Beal, Peter, *In Praise of Scribes: Manuscripts and Their Makers in Seventeenth-Century England* (Oxford: Clarendon Press, 1998)
- Brink, Jean R., 'Manuscript Culture Revisited', *Sidney Journal*, 17 (1999), 19-30
- Brogan, Hugh, 'Marvell's Epitaph on –', *Renaissance Quarterly*, 32 (1979), 197-99
- Brown, Michael, Charles I. McGrath and Thomas P. Power, eds., *Converts and Conversion in Ireland, 1650-1850* (Dublin: Four Courts Press, 2005)
- Brown, Sylvia, ed., *Women, Gender and Radical Religion in Early Modern Europe* (Leiden: Brill, 2007)
- Burke, Victoria E., and Jonathan Gibson, eds., *Early Modern Women's Manuscript Writing: Selected Papers from the Trinity/Trent Colloquium* (Aldershot: Ashgate, 2004)
- Bushnell, Rebecca, *Green Desire: Imagining Early Modern English Gardens* (Ithaca: Cornell University Press, 2003)

- Butt, John, ed., *Of Books and Humankind: Essays and Poems Presented to Bonamy Dobrée* (London: Routledge, 1964)
- Callaghan, Dymphna, ed., *A Feminist Companion to Shakespeare* (Oxford: Blackwell, 2000)
- Canny, Nicholas, *The Upstart Earl: A Study of the Social and Mental World of Richard Boyle, First Earl of Cork 1566-1643* (Cambridge: Cambridge University Press, 1982)
- Capp, Bernard, *Astrology and the Popular Press: English Almanacs 1500-1800* (Faber and Faber: London, 1979)
- Carpenter, Andrew, *Verse in English from Tudor and Stuart Ireland* (Cork: Cork University Press, 2003)
- Chelsea Physic Garden, 'Our Mission Statement',
<<http://www.chelseaphysicgarden.co.uk/aboutus/index.html>> Accessed 8 January 2010.
- Christianson, David, *Timepieces: Masterpieces of Chronometry* (Newton Abbot, Devon: David & Charles, 2002)
- Clarke, Elizabeth, 'A heart terrifying Sorrow': the Deaths of Children in Seventeenth-Century Women's Manuscript Journals', in *Representations of Childhood Death*, ed. by Gillian Avery and Kimberley Reynolds, pp. 65-86
- , and Lynn Robson, 'Why are we still "Kissing the Rod"? The Future for the Study of Early Modern Women's Writing', *Women's Writing*, 14 (2007), 177-93
- Clucas, Stephen, 'The Correspondence of a XVII-Century 'Chymicall Gentleman': Sir Cheney Culpeper and the Chemical Interests of the Hartlib Circle', in *Ambix* 40 (1993), pp. 147-70
- , ed., *A Princely Brave Woman: Margaret Cavendish, Duchess of Newcastle* (Aldershot: Ashgate, 2003)
- Clulee, N. H., 'Astronomia inferior: Legacies of Johannes Trithemius and John Dee', in *Secrets of Nature: Astrology and Alchemy in Early Modern Europe*, ed. William R. Newman and Anthony Grafton (Cambridge, MA: MIT Press, 2001), pp. 173-233
- Connolly, Ruth, 'A Manuscript Treatise by Viscountess Ranelagh (1614-1691)', *Notes and Queries*, 53 (2006), 170-72

- , 'A Proselytising Protestant Commonwealth: The Religious and Political Ideals of Katherine Jones, Viscountess Ranelagh', *The Seventeenth Century*, 23 (2008), 244-64
- , "'A Wise and Godly Sybilla': Viscountess Ranelagh and the Politics of International Protestantism", in *Women, Gender and Radical Religion*, ed. by Sylvia Brown (Leiden: Brill, 2007), pp. 285-306
- Coughlan, Patricia, 'Natural History and Historical Nature: The Project for a Natural History of Ireland', in *Samuel Hartlib and Universal Reformation*, ed. by Mark Greengrass, et al, pp. 298-317
- Crawford, Patricia, 'Women's Published Writings 1600-1700', in *Women in English Society 1500-1800*, ed. by Mary Prior, pp. 211-74
- Cummins, Juliet, and David Burchell, eds., *Science, Literature and Rhetoric in Early Modern England* (Aldershot: Ashgate, 2007)
- Cunningham, Andrew, 'The Culture of Gardens', in *Cultures of Natural History*, ed. by N. Jardine, et al, pp. 38-56
- Darley, Gillian, *John Evelyn: Living for Ingenuity* (New Haven, CT: Yale University Press, 2007)
- Daybell, James, ed., *Early Modern Women's Letter Writing, 1450-1700* (Basingstoke: Palgrave, 2001)
- , and Peter Hinds, eds. *Material Readings of Early Modern Culture, 1580-1700* (Basingstoke: Palgrave, 2010)
- Dear, Peter, 'A Philosophical Duchess: Understanding Margaret Cavendish and the Royal Society', in *Science, Literature and Rhetoric*, ed. by Juliet Cummins and David Burchell, pp. 125-43
- Debus, A.G., *The English Paracelsians* (London: Oldbourne, 1965)
- Dewhurst, Kenneth, *Dr. Thomas Sydenham (1624-1689): His Life and Original Writings* (London: Wellcome Historical Medical Library, 1966)
- DiMeo, Michelle, and Rebecca Laroche, 'Elizabeth Isham and Medicine', in *Constructing Elizabeth Isham*
<<http://www2.warwick.ac.uk/fac/arts/ren/projects/isham/medicine/>>
- Doherty, Richard, *The Williamite War in Ireland 1688-1691* (Dublin: Four Courts Press, 1998)

- Dolan, Frances E., 'Taking the Pencil out of God's Hand: Art, Nature and the Face-Painting Debate in Early Modern England', *PMLA*, 108 (1993), 224-39
- Dowd, Michelle M., and Julie A. Eckerle, eds., *Genre and Women's Life Writing in Early Modern England* (Aldershot: Ashgate, 2007)
- Drayton, Richard, *Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World* (New Haven: Yale University Press, 2000)
- Dunn, Kevin, 'Milton Among the Monopolists: *Areopagitica*, Intellectual Property and the Hartlib Circle', in *Samuel Hartlib and Universal Reformation*, ed. by Mark Greengrass, et al, pp. 177-192
- Eamon, William, *Science and the Secrets of Nature: Books of Secrets in Medieval and Early Modern Culture* (Princeton: Princeton University Press, 1994)
- Engineer, Amanda, 'The 17th-Century "Lady Doctor"', *Friends of the Wellcome Library and Centre Newsletter*, 31 (2003), 2-5
- Evenden, Doreen, *The Midwives of Seventeenth-Century London* (Cambridge: Cambridge University Press, 2000)
- Ezell, Margaret J. M., 'Domestic Papers: Manuscript Culture and Early Modern Women's Life Writing', in *Genre and Women's Life Writing*, ed. by Michelle M. Dowd and Julie A. Eckerle, pp. 33-48
- , *The Patriarch's Wife: Literary Evidence and the History of the Family* (Chapel Hill: University of North Carolina Press, 1987)
- Field, Catherine, "'Many hands hands': Writing the Self in Early Modern Women's Recipe Books', in *Genre and Women's Life Writing*, ed. by Michelle M. Dowd and Julie A. Eckerle, pp. 49-63
- Fierz, Markus, *Girolamo Cardano, 1501-1576: Physician, Natural Philosopher, Mathematician, Astrologer, and Interpreter of Dreams*, trans. by Helga Niman. (Boston: Birkhauser, 1982)
- Findlen, Paula, 'Inventing Nature: Commerce, Art, and Science in the Early Modern Cabinet of Curiosities', in *Merchants and Marvels*, ed. by Pamela H. Smith and Paula Findlen, pp. 297-323
- Fitzsimon, Betsey Taylor, 'Conversion, the Bible and the Irish Language: the Correspondence of Lady Ranelagh and Bishop Dopping', in *Converts and Conversion in Ireland*, ed. by Michael Brown, et al, pp. 157-82

- Fleissner, Jennifer L., 'Is Feminism a Historicism?', *Tulsa Studies in Women's Literature*, 21 (2002), 45-66
- Frank, Robert G., Jr., *Harvey and the Oxford Physiologists: Scientific Ideas and Social Interaction* (Berkeley: University of California Press, 1980)
- Furdell, Elizabeth Lane, *Publishing and Medicine in Early Modern England* (Rochester, NY: Rochester University Press, 2002)
- Gibson, Jonathan, 'Letters', in *A Companion to English Renaissance Literature and Culture*, ed. by Michael Hattaway, pp. 615-19
- , 'Significant Space in Manuscript Letters', *The Seventeenth Century*, 12 (1997), 1-9
- Greengrass, Mark, 'Archive Refractions: Hartlib's Papers and the Workings of an Intelligencer', in *Archives of the Scientific Revolution*, ed. by Michael Hunter, pp. 35-48
- , Michael Leslie, and Timothy Raylor, eds., *Samuel Hartlib & Universal Reformation: Studies in Intellectual Communication* (Cambridge: Cambridge University Press, 2002)
- Greer, G., and S. Hastings, 'Introduction', in *The Surviving Works of Anne Wharton* (Essex: Stump Cross Books, 1997), pp. 1-124
- Haigh, Christopher, 'The Troubles of Thomas Pestell: Parish Squabbles and Ecclesiastical Politics in Caroline England', *Journal of British Studies*, 41 (2002), 403-28
- Hall, Marie Boas, *Henry Oldenburg: Shaping the Royal Society* (Oxford: Oxford University Press, 2002)
- Hand, Wayland D., *Magic Medicine: The Folkloric Component of Medicine in the Folk Belief, Custom and Ritual of the Peoples of Europe and America* (Berkeley and Los Angeles: University of California Press, 1980)
- Harris, Frances, 'Living in the Neighbourhood of Science: Mary Evelyn, Margaret Cavendish and the Greshamites', in *Women, Science and Medicine*, ed. by Lynette Hunter and Sarah Hutton, pp. 198-217
- Harrison, Peter, 'What's Philosophical about Natural Philosophy?', at EMPHASIS seminar, Birkbeck College, University of London, 8 December 2007
- Hattaway, Michael, ed., *A Companion to English Renaissance Literature and Culture* (Oxford: Blackwell, 2003)

- Heawood, Edward, *Watermarks: Mainly of the Seventeenth and Eighteenth Centuries* (Hiversum, Holland: Paper Publications Society, 1957)
- Hobby, Elaine, *Virtue of Necessity: English Women's Writing 1649-88* (London: Virago, 1988)
- Hole, Christina, *The English Housewife in the Seventeenth Century* (London: Chatto & Windus, 1953)
- Howard, Jean, 'Feminism and the Question of History: Resituating the Debate', *Women's Studies: An Interdisciplinary Journal*, 19 (1991), 149-57
- Hull, Suzanne W., *Chaste, Silent and Obedient: English Books for Women 1475-1640* (San Marino, CA: Huntington Library Publications, 1982)
- Hunt, John Dixon, 'Hortulan Affairs', in *Samuel Hartlib & Universal Reformation*, ed. by Mark Greengrass, et al, pp. 321-42
- Hunter, Lynette, 'Sisters of the Royal Society: The Circle of Katherine Jones, Lady Ranelagh', in *Women, Science and Medicine*, ed. by Lynette Hunter and Sarah Hutton, pp. 178-197
- , "'Sweet Secrets'" from Occasional Receipt to Specialised Books: The Growth of a Genre', in *'Banqueting Stuffle'*, ed. by C. Anne Wilson, pp. 36-59
- , 'Women and Domestic Medicine: Lady Experimenters, 1570-1620', in *Women, Science and Medicine*, ed. by Lynette Huner and Sarah Hutton, pp. 89-107
- , and Sarah Hutton, eds., *Women, Science and Medicine 1500-1700* (Stroud, Gloucestershire: Sutton, 1997)
- Hunter, Michael, ed., *Archives of the Scientific Revolution: The Formation and Exchange of Ideas in Seventeenth-Century Europe* (Woodbridge: Boydell Press, 1998)
- , *The Boyle Papers: Understanding the Manuscripts of Robert Boyle* (Aldershot: Ashgate, 2007)
- , *Letters and Papers of Robert Boyle: A Guide to the Manuscripts and Microfilm* (Bethesda, MD: University Publications of America, 1992)
- , 'Robert Boyle: An Introduction', *The Robert Boyle Website*, <http://www.bbk.ac.uk/boyle/boyle_learn/boyle_introduction.htm>
- , 'Robert Boyle, Narcissus Marsh and the Anglo-Irish Intellectual Scene in the Late-Seventeenth Century', in *The Making of Marsh's Library: Learning, Politics and*

- Religion in Ireland, 1650-1750*, ed. by Muriel McCarthy and Ann Simmons (Dublin: Four Courts Press, 2004), pp. 51-75
- , *Robert Boyle (1627-91): Scrupulosity and Science* (Woodbridge: Boydell Press, 2000)
- , ed., *Robert Boyle Reconsidered* (Cambridge: Cambridge University Press, 1994)
- , *The Royal Society and its Fellows, 1660–1700: The Morphology of an Early Scientific Institution*, 2nd edn (Oxford: British Society for the History of Science, 1994)
- Hutton, Sarah, *Anne Conway: A Woman Philosopher* (Cambridge: Cambridge University Press, 2004)
- , 'In dialogue with Thomas Hobbes: Margaret Cavendish's Natural Philosophy', *Women's Writing*, 4 (1997), 421-32
- , 'The Riddle of the Sphinx: Francis Bacon and the Emblems of Science', in *Women, Science and Medicine*, pp. 7-28
- Jacob, James, 'Boyle's Circle in the Protectorate: Revelation, Politics and the Millennium', *Journal of the History of Ideas*, 38 (1977), 118-32
- Jardine, Lisa, *The Curious Life of Robert Hooke: The Man who Measured London* (London: Harper Perennial, 2003)
- , *Ingenious Pursuits: Building the Scientific Revolution* (London: Abacus, 2000)
- Jardine, N., J.A. Secord, and E.C. Spary, eds., *Cultures of Natural History* (Cambridge: Cambridge University Press, 1996)
- Jenner, Mark S. R., and Patrick Wallis, eds., *Medicine and the Market in England and Its Colonies, c. 1450-c.1850* (London: Palgrave, 2007)
- Johns, Adrian, *The Nature of the Book: Print and Knowledge in the Making* (Chicago: University of Chicago Press: 1998)
- Johnstone, Grace, *Leading Women of the Restoration* (London: Digby, 1891)
- Jordanova, Ludmilla, 'Gender and the Historiography of Science', *British Journal for the History of Science*, 26 (1993), 469-83
- Justice, George L., and Nathan Tinker, eds., *Women's Writing and the Circulation of Ideas: Manuscript Publication in England, 1550-1800* (Cambridge: Cambridge University Press, 2002)

- Kaplan, Barbara, *'Divulging of Useful Truths in Physick': The Medical Agenda of Robert Boyle* (Baltimore: Johns Hopkins University Press, 1993)
- Kaplan, Barbara Beigun, 'Greatrakes the Stroker: The Interpretations of his Contemporaries', *Isis*, 73 (1982), 178-85
- Kass-Simon, G., and Patricia Farnes, eds., *Women of Science: Righting the Record* (Bloomington, IN: Indiana University Press, 1990)
- Katz, David, *Philo-semitism and the Readmission of the Jews to England, 1603-1655* (Oxford: Oxford University Press, 1982)
- Keil, Inge, 'Johann Wiesel and the Hartlib Circle', in *Samuel Hartlib and Universal Reformation*, ed. by Mark Greengrass, et al, pp. 268-78
- Keller, Evelyn Fox, *Reflections on Gender and Science* (New Haven, CT: Yale University Press, 1985)
- Kishlansky, Mark, *A Monarchy Transformed: Britain 1603-1714* (London: Penguin, 1996)
- Kynell, Teresa C., and Michael G. Morgan, eds., *Three Keys to the Past: the History of Technical Communication* (Westport, CT: Greenwood, 1999)
- Leong, Elaine, 'Making Medicines in the Early Modern Household', *Bulletin for the History of Medicine*, 82 (2008), 145-68
- , and Sara Pennell, 'Recipe Collections and the Currency of Medical Knowledge in the Early Modern "Medical Marketplace"', in *Medicine and the Market in England*, ed. by Mark S. R. Jenner and Patrick Wallis, pp. 133-52
- Lepore, Jill, *The Name of War: King Philip's War and the Origins of American Identity* (New York: Knopf, 1998)
- Leslie, Michael, and Timothy Raylor, eds., *Culture and Cultivation in Early Modern England: Writing and the Land* (Leicester: Leicester University Press, 1992)
- Leslie, Micahel, 'The Spiritual Husbandry of John Beale', in *Culture and Cultivation in Early Modern England*, ed. by Michael Leslie and Timothy Raylor, pp. 151-72
- Linden, Stanton J., 'Women in Medicine on the Eve of the Enlightenment: Mrs Mary Trye's *Medicatrix: or the Woman-Physician* (1675)', in *Transactions of the Eighth International Congress on the Enlightenment III*, ed. by H.T. Mason (Oxford: The Voltaire Foundation at the Taylor Institution, 1992), pp. 1891-94

- Little, Patrick, 'The Earl of Cork and the Fall of Strafford, 1638–41', *Historical Journal*, 39 (1996), 619–35
- , 'The New English in Europe, 1625-60', in *Community in Early Modern Ireland*, ed. by Robert Armstrong and Tadhg Ó hAnnracháin, pp. 154-66
- Love, Harold, *Scribal Publication in Seventeenth-Century England* (Oxford: Oxford University Press, 1993)
- Lynch, Kathleen M., 'The Incomparable Lady Ranelagh', in *Of Books and Humankind*, ed. by John Butt, pp. 25-35
- , *Roger Boyle, First Earl of Orrery* (Knoxville: University of Tennessee Press, 1965)
- Lynch, William T., 'A Society of Baconians?: The Collective Development of Bacon's Method in the Royal Society of London', in *Francis Bacon and the Refiguring of Early Modern Thought*, ed. by Julie Robin Solomon and Catherine Gimelli Martin, pp. 173-202
- Mac Cuarta S J, Brian, ed., *Ulster 1641: Aspects of the Rising* (Belfast: Institute of Irish Studies, The Queen's University of Belfast, 1993)
- MacCurtain, Margaret, 'Women, Education and Learning in Early Modern Ireland', in *Women in Early Modern Ireland*, ed. by Margaret MacCurtain and Mary O'Dowd, pp. 160-78
- , and Mary O'Dowd, eds., *Women in Early Modern Ireland* (Dublin: Wolfhound Press, 1991)
- Maddison, R.E.W., *The Life of the Honourable Robert Boyle* (London: Taylor & Francis, 1969)
- Marland, Hilary, and Margaret Pelling, eds., *The Task of Healing: Medicine, Religion and Gender in England and the Netherlands 1450-1800* (Rotterdam: Erasmus Publishing, 1996)
- Marotti, Arthur, *Manuscript, Print, and the English Renaissance Lyric* (Ithaca: Cornell University Press, 1995)
- McCarthy, Muriel, and Ann Simmons, eds., *The Making of Marsh's Library: Learning, Politics and Religion in Ireland, 1650-1750* (Dublin: Four Courts Press, 2004)
- McCormick, Ted, *William Petty and the Ambitions of Political Arithmetic* (Oxford: Oxford University Press, 2009)

- Mendelson, Sarah Heller, *The Mental World of Stuart Women: Three Stories* (Amherst: University of Massachusetts Press, 1987)
- Merchant, Carolyn, *The Death of Nature: Women, Ecology and the Scientific Revolution* (San Francisco: Harper & Row, 1980)
- Meynell, G.C., *Materials for a Biography of Dr Thomas Sydenham (1624-1689)* (Folkstone, Kent: Winterdown Books, 1988)
- Miller, Jane A., 'Women in Chemistry', in *Women of Science*, ed. by G. Kass-Simon and Patricia Farnes, pp. 300-34
- Morton, A. G., *History of Botanical Science: An Account of the Development of Botany from Ancient Times to the Present Day* (London: Academic Press, 1981)
- Nagy, Doreen Evenden, *Popular Medicine in Early Modern England* (Bowling Green, OH: Bowling Green State University Popular Press, 1988)
- Neely, Carol Thomas, 'Constructing the Subject: Feminist Practice and the New Renaissance Discourses', *English Literary Renaissance*, 18 (1988), 5-18
- Newman, William, *Gehennical Fire: The Lives of George Starkey* (Cambridge, MA: Harvard University Press, 1994)
- , 'George Starkey and the Selling of Secrets' in *Samuel Hartlib & Universal Reformation*, ed. by Mark Greengrass, et al, pp. 193-210
- , and Anthony Grafton, eds., *Secrets of Nature: Astrology and Alchemy in Early Modern Europe* (Cambridge, MA: MIT Press, 2001)
- O'Dowd, Mary, 'Women and War in Ireland in the 1640s' in *Women in Early Modern Ireland*, ed. by Margaret MacCurtain and Mary O'Dowd, pp. 91-111
- O'Callaghan, Michelle, 'Publication: Print and Manuscript', in *A Companion to English Renaissance Literature and Culture*, ed. by Michael Hattaway, pp. 81-94
- Osler, Margaret J., 'The Gender of Nature and the Nature of Gender in Early Modern Natural Philosophy', in *Men, Women, and the Birthing of Modern Science*, ed. Judith P. Zinsser, pp. 71-85
- Oster, Malcolm, 'Millenarianism and the New Science: The Case of Robert Boyle', in *Samuel Hartlib & Universal Reformation*, ed. by Mark Greengrass, et al, pp. 137-48
- , 'Virtue, Providence and Political Neutralism: Boyle and Interregnum Politics', in *Robert Boyle Reconsidered*, ed. by Michael Hunter, pp. 19-36

- Pagel, Walter, *Joan Baptista Van Helmont: Reformer of Science and Medicine* (Cambridge: Cambridge University Press, 1982)
- Palgrave, Mary E., *Mary Rich, Countess of Warwick (1625-1678)* (London: Dent, 1901)
- Pelling, Margaret, 'Compromised by Gender: The Role of the Male Medical Practitioner in Early Modern England', in *The Task of Healing*, ed. Hilary Marland and Margaret Pelling, pp. 101-33
- , *Medical Conflicts in Early Modern London: Patronage, Physicians, and Irregular Practitioners 1550-1640* (Oxford: Oxford University Press, 2003)
- , and Charles Webster, 'Medical Practitioners', in *Health, Medicine and Mortality*, ed. by Charles Webster, pp. 165-235
- , 'Thoroughly Resented? Older women and the Medical Role in Early Modern London', in *Women, Science and Medicine*, ed. by Lynette Hunter and Sarah Hutton, pp. 63-88
- Pennell, Sara, 'Perfecting Practice? Women, Manuscript Recipes and Knowledge in Early Modern England', in *Early Modern Women's Manuscript Writing*, ed. by Victoria E. Burke and Jonathan Gibson, pp. 237-58
- , ed., 'Introduction', in *Women in Medicine: Remedy Books, 1533 – 1865* (Woodbridge, CT: Primary Source Microfilm, 2004)
- Perceval-Maxwell, Michael, *The Outbreak of the Irish Rebellion of 1641* (Dublin: McGill-Queen's University Press, 1994)
- Perry, Ruth, 'Radical Doubt and the Liberation of Women', *Eighteenth-Century Studies*, 18 (1985), 472-93
- Phillippy, Patricia, *Painting Women: Cosmetics, Canvases and Early Modern Culture* (Baltimore: Johns Hopkins University Press, 2006)
- Pickering, David, *The Cassell Dictionary of Folklore* (London: Cassell, 1999)
- Plain, Gill, and Susan Sellers, eds., *A History of Feminist Literary Criticism* (Cambridge: Cambridge University Press, 2007)
- Pollock, Linda, *With Faith and Physic: The Life of a Tudor Gentlewoman, Lady Grace Mildmay 1552-1620* (Collins & Brown: London, 1993)
- Popkin, Richard H., 'Hartlib, Dury and the Jews', in *Samuel Hartlib and Universal Reformation*, ed. by Mark Greengrass, et al, pp. 118-36

- , 'A Note on Moses Wall', in *Menasseh ben Israel, The Hope of Israel: The English Translation by Moses Wall, 1652*, ed. by Henry Méchoulan and Gérard Nahon (Oxford: Oxford University Press, 1987), pp. 165-70
- Porter, Roy, ed., *The Popularisation of Medicine 1650-1850* (London: Routledge, 1992)
- Potter, Elizabeth, *Gender and Boyle's Law of Gases* (Bloomington, IN: Indiana University Press, 2001)
- Price, Bronwen, 'Feminine Modes of Knowing and Scientific Enquiry: Margaret Cavendish's Poetry as Case Study', in *Women and Literature in Britain 1500-1700*, ed. by Helen Wilcox, pp. 117-39
- Principe, Lawrence, *The Aspiring Adept: Robert Boyle and his Alchemical Quest* (Princeton: Princeton University Press, 1998)
- Prior, Mary, ed., *Women in English Society 1500-1800* (London: Methuen, 1985)
- Rackin, Phyllis, 'Misogyny is Everywhere', in *A Feminist Companion to Shakespeare*, ed. by Dymphna Callaghan, pp. 42-56
- Rose, Hilary, 'Foreword: From Household to Public Knowledge, to a New Production System of Knowledge', in *Women, Science and Medicine*, ed. by Lynette Hunter and Sarah Hutton, pp. xi-xx
- Roth, Cecil, *A Life of Menasseh ben Israel: Rabbi, Printer, and Diplomat* (Philadelphia: The Jewish Publication Society of American, 1934)
- Saunders, J.W., 'The Stigma of Print: A Note on the Social Bases of Tudor Poetry', *Essays in Criticism*, 1 (1951), 139-64
- Schiebinger, Londa, *The Mind Has No Sex?: Women in the Origins of Modern Science*, (Cambridge, MA: Harvard University Press, 1989)
- Shapin, Steven, 'The House of Experiment in Seventeenth-Century England', *Isis*, 79 (1988), 373-404
- , and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle and the Experimental Life* (Princeton: Princeton University Press, 1985)
- , *The Scientific Revolution* (Chicago: University of Chicago Press, 1998)
- , *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago: University of Chicago Press, 1994)

- Sheppard, F.H.W., ed., *Survey of London*, vol. 29 & 30 (London: English Heritage, 1960)
- Sim, Alison, *The Tudor Housewife* (Gloucestershire: Sutton, 2000)
- Smith, Charlotte Fell, *Mary Rich, Countess of Warwick (1625–1678): Her Family and Friends* (London: Longmans, Green, and Co., 1901)
- Smith, Hilda L., ‘Margaret Cavendish and the Microscope as Play’, in *Men, Women and the Birthing of Modern Science*, ed. by Judith P. Zinsser, pp. 34-47
- Smith, Pamela H., and Paula Findlen, eds., *Merchants and Marvels: Commerce, Science and Art in Early Modern Europe* (New York: Routledge, 2002)
- Smyth, Adam, ‘Almanacs, Annotators, and Life Writing in Early Modern England’, *English Literary Renaissance*, 38 (2008), 200-44
- Snook, Edith, ‘“The Beautifying Part of Physic”: Women’s Cosmetic Practices in Early Modern England’, *Journal of Women’s History*, 20 (2008), 10-33
- Solomon, Julie Robin, and Catherine Gimelli Martin, eds., *Francis Bacon and the Refiguring of Early Modern Thought: Essays to Commemorate The Advancement of Learning (1605-2005)* (Aldershot: Ashgate, 2005)
- Speck, W. A., *James II* (London: Longman, Pearson, 2002)
- Stagl, Justin, *A History of Curiosity: The Theory of Travel 1550-1800* (Chur: Harwood, 1995)
- Steen, Sara Jayne, ‘How Subject to Interpretation’: Lady Arbella Stuart and the Reading of Illness’, in *Early Modern Women’s Letter Writing, 1450-1700*, ed. by James Daybell, pp. 109-26
- Steneck, Nicholas, ‘Greatrakes the Stroker: The Interpretations of Historians’, *Isis*, 73 (1982), 160-77
- Stevenson, Jane, ‘Women, Writing and Scribal Publication in the Sixteenth Century’, *English Manuscript Studies 1100-1700*, 9 (2000), 1-32
- Strasser, Gerhard F., ‘Closed and Open Languages: Samuel Hartlib’s Involvement with Cryptology and Universal Languages’, in *Samuel Hartlib & Universal Reformation*, ed. by Mark Greengrass, et al, pp. 151-161
- Stubbs, Mayling, ‘John Beale, Philosophical Gardener of Herefordshire; Part I. Prelude to the Royal Society (1608-1663)’, *Annals of Science*, 39 (1982), pp. 463-89

- Swann, Marjorie, *Curiosities and Texts: The Culture of Collecting in Early Modern England* (Philadelphia: University of Pennsylvania Press, 2001)
- Tebeaux, Elizabeth, 'The Emergence of Women Technical Writers in the 17th Century: Changing Voices Within a Changing Milieu', in *Three Keys to the Past*, ed. by Teresa C. Kynell and Michael G. Morgan, pp. 105-22
- , 'Women and Technical Writing, 1475-1700', in *Women, Science and Medicine*, ed. by Lynette Hunter and Sarah Hutton, pp. 178-97
- Trevor-Roper, Hugh, *Catholics, Anglicans and Puritans: Seventeenth Century Essays* (London: Secker & Warburg, 1987)
- , *Religion, the Reformation, and Social Change*, 3rd edn (London: Macmillan, 1967; London: Secker & Warburg, 1984)
- Turnbull, G.H., *Hartlib, Dury and Comenius: Gleanings from Hartlib's Papers* (London: Hodder & Astoughton, 1947)
- , *Samuel Hartlib: A Sketch of His Life and His Relations to J.A. Comenius* (London: Oxford University Press, 1920)
- Vincent, Clare, 'European Clocks in the Seventeenth and Eighteenth Century', in *Heilbrunn Timeline of Art History* (New York: The Metropolitan Museum of Art, 2000) <http://www.metmuseum.org/toah/hd/clck/hd_clck.htm>
- Wall, Wendy, *The Imprint of Gender: Authorship and Publication in the English Renaissance* (Ithaca: Cornell University Press, 1993)
- Wallace, John M., *Destiny His Choice: The Loyalism of Andrew Marvell* (Cambridge: Cambridge UP, 1968, repr. 1980)
- Watts, Ruth, *Women in Science: Social and Cultural History* (Abingdon, Oxon: Routledge, 2007)
- Wear, Andrew, *Knowledge and Practice in English Medicine, 1550-1680* (Cambridge: Cambridge University Press, 2000)
- , 'The Popularization of Medicine in Early Modern England', in *The Popularisation of Medicine*, ed. by Roy Porter, pp. 17-41
- Webster, Charles, 'Alchemical and Paracelsian Medicine', in *Health, Medicine and Mortality*, ed. by Charles Webster, pp. 301-34

- , 'Benjamin Worsley: Engineering for Universal Reform from the Invisible College to the Navigation Act', in *Samuel Hartlib & Universal Reformation*, ed. by Mark Greengrass, et al, pp.213-35
- , 'English Medical Reformers of the Puritan Revolution: A Background to the "Society of Chymical Physitians"', *Ambix*, 13 (1965-66), 16-41
- , *The Great Instauration: Science, Medicine and Reform 1626-1660* (London: Duckworth, 1975)
- , ed., *Health, Medicine and Mortality in the Sixteenth Century* (Cambridge: Cambridge University Press, 1979)
- , 'New Light on the Invisible College: The Social Relations of English Science in the Mid-Seventeenth Century', *Transactions of the Royal Historical Society*, 24 (1974), 19-42
- , 'Water as the Ultimate Principle of Nature: The Background to Boyle's *Sceptical Chymist*', *Ambix*, 13 (1965-66), 96-107
- Wilcox, Helen, 'Feminist Criticism in the Renaissance and Seventeenth Century', in *A History of Feminist Literary Criticism*, ed. by Gill Plain and Susan Sellers, pp. 27-44
- , ed., *Women and Literature in Britain 1500-1700* (Cambridge: Cambridge University Press, 1996)
- Wilson, C. Anne, ed., *'Banquetting Stuffe': The Fare and Social Background of the Tudor and Stuart Banquet* (Edinburgh: Edinburgh University Press, 1991)
- , ed., *The Country House Kitchen Garden 1600-1950* (Stroud, Gloucestershire: Sutton, 1998)
- , 'Growing Aromatic Herbs and Flowers for Food and Physic', in *The Country House Kitchen Garden 1600-1950*, ed. by C. Anne Wilson, pp. 86-99
- Wolfe, Heather, ed., 'Textual Introduction', in *Elizabeth Cary, Lady Falkland: Life and Letters* (Cambridge: Renaissance Texts from Manuscripts Publications, 2001), pp. 86-100, 225-32
- Woodhead, J.R., *The Rulers of London 1660-1689: A Biographical Record of the Aldermen and Common Councilmen of the City of London* (London: London & Middlesex Archaeological Society, 1965)
- Zinsser, Judith P., ed., *Men, Women, and the Birthing of Modern Science*, (DeKalb, IL: Northern Illinois University Press, 2005)

Unpublished Material:

Archer, Jayne, 'Women and Alchemy in Early Modern England' (unpublished doctoral thesis, University of Cambridge, 2000)

Connolly, Ruth, "'All Our Endeavours Terminate but in This": Self-Government in the Writings of Mary Rich, Countess of Warwick, and Katherine Jones, Lady Ranelagh' (unpublished doctoral thesis, University College Cork, 2004)

Leong, Elaine, 'Medical Recipe Collections in Seventeenth-Century England: Knowledge, Text and Gender' (unpublished doctoral thesis, University of Oxford, 2005)

Pal, Carol, 'Republic of Women: Rethinking the Republic of Letters, 1630-1680', 2 vols (unpublished doctoral thesis, Stanford University, 2006)

Stine, Jennifer, 'Opening Closets: The Discovery of Household Medicine in Early Modern England' (unpublished doctoral thesis, Stanford University, 1996)

Taylor, Elizabeth Anne, 'Writing Women, Honour, and Ireland: 1640-1715', 3 vols (unpublished doctoral thesis, University College Dublin, 1999)