WOMEN, SCIENCE AND MEDICINE 1500–1700

EDITED BY
LYNETTE HUNTER &

WOMEN, SCIENCE AND MEDICINE 1500–1700

MOTHERS AND SISTERS OF THE ROYAL SOCIETY

EDITED BY
LYNETTE HUNTER &
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CONTENTS

LIST OF ILLUSTRATIONS vii

LIST OF CONTRIBUTORS ix

Hilary Rose
FOREWORD xi

Lynette Hunter and Sarah Hutton
WOMEN, SCIENCE AND MEDICINE: INTRODUCTION 1

1. Sarah Hutton
THE RIDDLE OF THE SPHINX: FRANCIS BACON AND THE EMBLEMS OF SCIENCE 7

2. Elizabeth Tebeaux
WOMEN AND TECHNICAL WRITING, 1475–1700: TECHNOLOGY, LITERACY AND DEVELOPMENT OF A GENRE 29

3. Margaret Pelling
THOROUGHLY RESENTED? OLDER WOMEN AND THE MEDICAL ROLE IN EARLY MODERN LONDON 63

4. Lynette Hunter
WOMEN AND DOMESTIC MEDICINE: LADY EXPERIMENTERS, 1570–1620 89

5. Margaret P. Hannay
'HOW I THESE STUDIES PRIZE': THE COUNTESS OF PEMBROKE AND ELIZABETHAN SCIENCE 108

6. Reid Barbour
LUCY HUTCHINSON, ATOMISM AND THE ATHEIST DOG 122

7. Adrian Wilson
A MEMORIAL OF ELEANOR WILLUGHBY, A SEVENTEENTH-CENTURY MIDWIFE 138

8. Lynette Hunter
SISTERS OF THE ROYAL SOCIETY: THE CIRCLE OF KATHERINE JONES, LADY RANELAGH 178

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6. Reid Barbour
LUCY HUTCHINSON, ATOMISM AND THE ATHEIST DOG 122

7. Adrian Wilson
A MEMORIAL OF ELEANOR WILLUGHBY, A SEVENTEENTH-CENTURY MIDWIFE 138

8. Lynette Hunter
SISTERS OF THE ROYAL SOCIETY: THE CIRCLE OF KATHERINE JONES, LADY RANELAGH 178

9. Frances Harris
LIVING IN THE NEIGHBOURHOOD OF SCIENCE: MARY EVELYN, MARGARET CAVENDISH AND THE GRESHAMITES 198

10. Sarah Hutton
ANNE CONWAY, MARGARET CAVENDISH AND SEVENTEENTH-CENTURY SCIENTIFIC THOUGHT 218

11. Rob Iliffe and Frances Willmoth
ASTRONOMY AND THE DOMESTIC SPHERE: MARGARET FLAMSTEED AND CAROLINE HERSCHEL AS ASSISTANT-ASTRONOMERS 235

BIBLIOGRAPHY 266

INDEX 289

LIST OF ILLUSTRATIONS

1. Scienza (Science). From Ripa's *Iconologia* (1625), p. 589. Reproduced by permission of the Warburg Institute. 15
2. Title page of Francis Bacon's *Instauratio Magna* (1620). Reproduced by kind permission of the British Library. 16
3. Medicina (Medicine). From Ripa's *Iconologia* (1625), p. 413. Reproduced by permission of the Warburg Institute. 18
4. Minerva, armed, with a sphinx in place of the crest on her helmet. From Cartari's *Imagini* (1571), p. 361. Reproduced by permission of the Warburg Institute. 19
5. From Henry Platt's *Delightes for Ladies* (1602). Reproduced by permission of Special Collections, Brotherton Library, University of Leeds. 36
6. From *Here Beginneth the seinge of Urynes* (1650). 41
7. From William Lawson's *A New Orchard and Garden* (1623). 53
8. From William Lawson's *A New Orchard and Garden* (1623). 54
9. From Hannah Woolley's *The Gentlewomans Companion or, a Guide to the Female Sex* (1675). 57
10. Rembrandt, *Study for Bathsheba*, *c.* 1650, etching. By permission of the Courtauld Institute of Art, London. 65
11. Cornelius Dusart, *Old Woman Drinking*. By permission of the Courtauld Institute of Art, London. 69
12. Gabriel Metsu, *The Patient and the Doctor* (*c.* 1665). By permission of the Hermitage, St Petersburg/Bridgeman Art Library, London. 73
13. Jan Steen, *The Physician's Visit* (*c.* 1665). By permission of Apsley House, The Wellington Museum, London/Bridgeman Art Library, London. 78
14. Jan Steen, *The Physician's Visit* (*c.* 1665). By permission of Noortman (London) Ltd/Bridgeman Art Library, London. 81
15. Paul van Somer, portrait of Lady Elizabeth Grey, Countess of Kent (*c.* 1619). Reproduced by permission of the Tate Gallery. 92
16. Title page from *The Queens Closet Opened* (1655). Reproduced by permission of Special Collections, Brotherton Library, University of Leeds. 94
17. A page from the Duchess of Norfolk's *Household Book*. Reproduced by permission of Worthing Museum and Art Gallery. 97
18. Title page from *Natura Exenterata: or Nature Unbowelled* (1655). Reproduced by permission of Special Collections, Brotherton Library, University of Leeds. 104

75 F.P. Wilson (1927), p. 65. It is perhaps worth noting a concern in the early 1580s about 'old witches' in connection with a Catholic conspiracy against Elizabeth: Sharpe (1996), p. 46.

76 For Horsley, for example, English witches were more often diviners than healers: (1979), pp. 700ff. Particularly to be noted in the present context is MacDonald (ed.) (1991), which concerns a famous case involving one of the elderly female irregulars, Elizabeth Jackson, and the conflicting interpretations of the condition of her alleged victim, Mary Glover, offered by fellows of the college.

77 Monter (1987), p. 212. On witchcraft and healing in the English countryside, see Sawyer (1988–9). For a detailed case study of one English 'urban' witch who was elderly (though not poor) and a healer, see Gregory (1991). For Rye, a town of *c.* 2,000 inhabitants, Gregory stresses socio-economic factors.

78 Cf. De Blécourt (1992), pp. 52–4, who ascribes the continuing survival of cunning women in cities to their use of words, suggesting that the use of material means would have been rigorously suppressed. Note that the prescription of purging ales was not confined to women; for the surgeon, oculist and practitioner of physic Richard Banister, his own recipe was a valued part of his practice: Banister (1621). Estes also singles out women's powers of speech, though for the different purpose of suggesting that those women who used material means were less likely to be accused of witchcraft: Estes (1983), esp. p. 278.

79 Horsley (1979), pp. 705ff; Estes (1983) p. 212; Kelly-Gadol (1987), pp. 177, 188, 190. Cf. Monter (1969a), pp. 55–71. G. Zilboorg (1935), discusses exceptional medical figures from the psychiatric point of view. Holmes (1993) sees the influence of male officials as a chief factor in the shift in seventeenth-century English witchcraft crimes away from property and toward illness and death (hence the increased proportion of female witnesses).

80 Pelling (1996a).

81 Pelling (1995b), pp. 383–401.

82 Thomas (1976), pp. 33–4; Pelling (1991), p. 84; cf. Stearns (1980), pp. 45ff.

83 Pelling (1996a), p. 113.

84 Marland (1996), pp. 273–87.

85 'Annals', 3 June 1631, p. 312.

4

Women and Domestic Medicine: Lady Experimenters, 1570–1620

Lynette Hunter

There is a curious gap that confronts anyone interested in the history of women in England in the early modern period. Although there had been a thriving market growing from the 1550s for books addressed to women on household science, medicine and pharmacy, from 1617 to 1653 with one exception there are no new books published on the topic and even reprints of earlier texts are rare. My research tries to understand that gap by looking at what happened up to 1617, what happened after 1652,[1] and what was going on in the interim years.

One of the startling aspects of publishing in the 1650s is the sudden appearance of a group of books of scientific, pharmaceutical and medicinal texts by women. Traditionally these had been published alongside diet, cookery and household 'secrets', but by men. In the 1650s most are still published with cookery, and with household technology and fashion.[2] The first three books of the genre which are attributed to women are Elizabeth Grey's *A Choice Manual of Rare and Select Secrets* (1653),[3] Queen Henrietta Maria's *The Queen's Closet Opened* (1655)[4] and Alethea Talbot's *Natura Exenterata* (1655).[5] The first two, along with that one exceptional book published in 1639 'Lord' Ruthven's *The Ladies Cabinet Opened*,[6] follow explicitly a three-part pattern of medicine, household science and fashion, and food preparation and cookery, that had only been implicit in earlier texts. Yet it is the medicinal and pharmaceutical content that is directly attributed to their aristocratic writers, and Talbot's *Natura Exenterata* is almost entirely of this kind.

These works are the first printed books of technical and scientific material in England to be attributed to women, and this may underlie the scepticism about the direct involvement of these women in the production of the texts, and the resulting lack of discussion about them.[7] The late 1970s to 1990s have seen a substantial reinvestigation of the Renaissance, Commonwealth and Restoration periods, to find texts that were written by women and men, in groups of labouring workers and the new towndwellers as well as in circles of the new gentry and aristocracy.[8] The search has uncovered a large body of work, much of which does not fit canonical traditions of literature, such as ballads, tales, sermons, and some of which does. For example, we now know that women were writing and sometimes had printed plays, poetry, romances, devotional texts,

political tracts and essays: but there is a silence on science and technology.[9] Hence it becomes significant if we find that these women were indeed involved in these published texts. It tells us different things about their lives, their education, the social world they inhabited, about the attitudes to science and more generally to knowledge, and it yields new perspectives on the interrelationships between men and women.

Two substantial questions form the basis for this chapter. First, what was so special about the 1650s, after such a long period of silence from 1617 to 1652, that led to these texts being published thirty to fifty years after they had been written? And, secondly, the specific focus, if it were plausible that these women had written, edited or compiled these texts, who were they and what was their context? How did they acquire the necessary skills and knowledge? I will argue that they turned a traditional pursuit of women in many communities into a leisure pursuit, and that in doing so they contributed to the movement into science as natural philosophy; yet I shall also argue that they did so while maintaining the basis of the pursuit as a social activity within the communities in which they participated.

WHO WERE THEY?

Elizabeth Grey and Alethea Talbot were sisters. They had both been close to Queen Anne, the wife of James I, being among her ladies of the bedchamber. Both subsequently became close friends of Henrietta Maria, wife to Charles I, Elizabeth going with her into exile in the Netherlands in 1642. With their sister Mary, they were the three surviving granddaughters of Elizabeth Barlow, Bess of Hardwick Hall, by her daughter Mary Cavendish. Bess, who had studiously 'married up' the social scale to reach the status of Countess of Shrewsbury on her fourth marriage, was closely involved in marrying off these young women, as she had already married off her daughters: Elizabeth to Charles Stuart (their unlucky offspring Arbella being second in line to the throne after James I and beheaded for it); and Mary to her step-son Gilbert Talbot, so that Mary became the next Countess of Shrewsbury. Alethea was married to Philip Howard, Earl of Surrey and Arundel; her sister Mary to William Herbert, Earl of Pembroke; and Elizabeth to Henry Grey de Ruthin, to become Earl of Kent.

Yet none of these was a 'safe' marriage: the Arundels were recovering from the beheading of the previous earl for treason, and the loss of their Norfolk title; William Herbert was only a few months out of the Tower where he had been put by Elizabeth for refusing to marry one of her ladies-in-waiting after making her pregnant; and Henry Grey was the son of a third son, with only a remote chance of inheriting a title if both his uncles died childless – which they did.[10] In each case, the luck of these men turned around and with it the fortunes of their wives. As William Herbert became influential at court, acting as Lord Chamberlain

under James I, becoming Chancellor of Oxford, and a patron of the arts, so he also developed a long-term relationship with the writer Mary Wroth,[11] and Mary Talbot vanishes to the family home where she seems to have looked after the resulting children and at least one ward while having none of her own. Anne Clifford, who had married William's brother Philip, writes in her diary of visiting Mary 'with all her children', soon after she herself became the next Countess of Pembroke on William's death in 1631. Anne Clifford's diary also tells us of going to the masque in London in 1617 with Elizabeth Grey and Alethea Talbot, all of them in the box of Lady Ruthven,[12] Barbara Ruthven being another lady of the bedchamber to Queen Anne, whose daughter Mary married the Van Dyck, the painter of Alethea's portrait referred to below.[13]

Alethea Talbot's husband Philip Howard became one of the first wholesale British exploiters of foreign parts, sending back from his continental travels and especially Italy much sculpture and art; many items of his collection are now held in the Ashmolean Museum.[14] He was also immensely influential at court, being the First Knight of the Realm for a substantial part of Charles' reign,[15] and entrusted with taking Henrietta Maria into exile.[16] Henry Grey, Elizabeth's husband, appears consistently to have held court positions but assumed no particular public face; Elizabeth herself developed a long-term liaison with John Selden whom she married on the death of Henry.[17] Selden was the steward on Grey's Bedfordshire estate, but is known now for his historical and legal writings, as well as for his work on the attributions and translations of many of the classical antiquities Philip Howard was sending to England.[18] Elizabeth herself was recognized as a learned woman: John Florio dedicated the third volume of his translations of Montaigne's *Essays* to her in 1603;[19] John Aubrey attests to her reputation as a physician and apothecary, saying also that she daily fed and cared for more than seventy poor people in her community, marking this as exceptional;[20] certainly her receipts, particularly for the 'Countess of Kent's Powder', are scattered through books by others for the rest of the century, and the great cook Robert May cites her as a source throughout his *Accomplisht Cook* of 1660. Alethea is less notorious but is noted for her participation in the queen's masques,[21] and as I hope to demonstrate for her medicinal and pharmaceutical work.

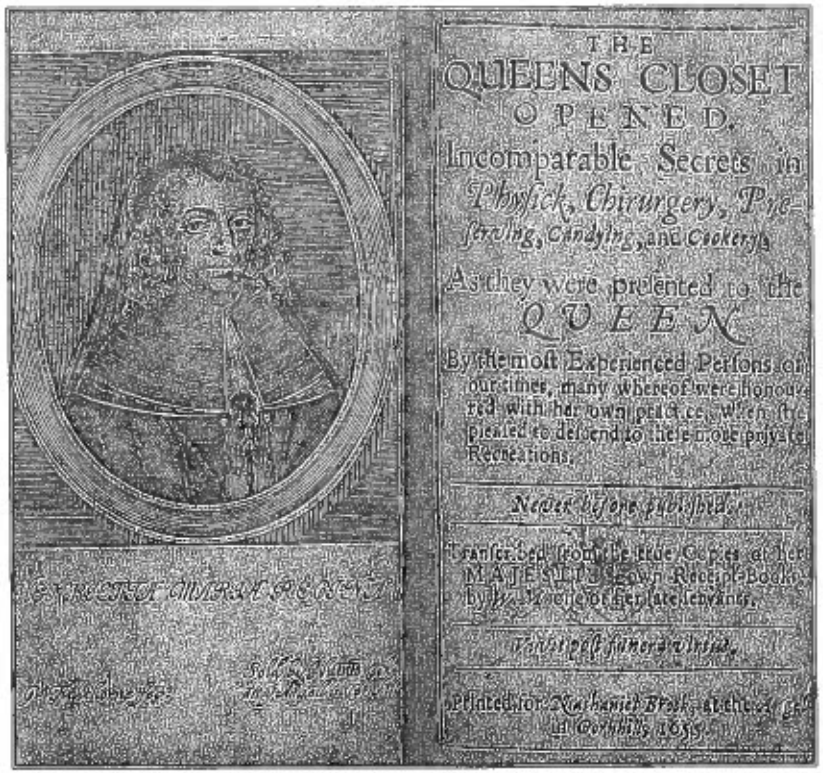
Both sisters were clearly also politically powerful – again Anne Clifford's diaries tell how, when she seemed to be prevented from pursuing her claim to her inheritance, she put the case to Elizabeth and Alethea, who put it to Queen Anne, who persuaded James to allow Clifford to make her claim. It took many years to complete, but without the lobbying on her behalf would never have occurred. It is a small but telling incident that indicates the kind of backroom, bedchamber politics in which the sisters engaged. Their mother Mary was more direct; she is reported as debating the reconciliation of Bess of Hardwick and George, Earl of Shrewsbury directly with Elizabeth I, and of remonstrating

Portrait of Lady Elizabeth Grey, Countess of Kent by Paul van Somer (*c.* 1619).

loudly with James I himself over the incarceration of Arbella, her niece.[22] Outside England, Alethea behaved in a similarly direct manner when a plot was hatched to sully the Howard name in the Venetian Senate. As the official representative of her husband she called the bluff of the English ambassador Henry Wotton, insisted on speaking with the Doge who disclaimed any knowledge of the alleged treason of the Howards, and then demanded an apology from the Senate.[23]

I offer this anecdotal detail of their lives partly because so little has been written about them, yet they were clearly rather extraordinary people with active interests in the arts, in politics, in their communities, as well as in medicine, pharmacy and chemical science. Their aristocratic position was, I will argue, as important to their scientific activity as their intellectual environment. The association they formed with Henrietta Maria from the 1620s to the 1640s, threw them together with a group of men with similar intellectual interests, but largely without aristocratic position.[24] Once we begin to look at their circle of friends and correspondents, it is possible to recognize them for respected participants in what we would now call the cross-disciplinary or pre-disciplinary culture of the Renaissance. Henrietta Maria's chamberlain was Sir Kenelm Digby, a highly respected scholar and practiser of chemistry who was known throughout Europe as someone exploring the new experimental science. Theodore de Mayerne, who had been brought from France to act as court physician to James, was her doctor. Mayerne was responsible for compiling the first London *Pharmacopoeia*,[25] published in 1617 by the College of Physicians in an attempt to control the prescriptions that members of the newly inaugurated Society of Apothecaries were licensed to make. John Pell, the mathematician, was part of her entourage, as was John Evelyn – a man known to us now mainly through his diary, but also a noted botanist and naturalist who was interested in the physiological effects of foodstuffs, writing discourses on bread, on herbs and on raw vegetables (see Frances Harris's chapter in this volume). Henrietta Maria herself is a historically evanescent character, known largely from her impact on Charles I. Although one must be cautious about the claim, the title page of the work attributed to her household, *Queen's Closet Opened*, states that many of the receipts 'were honoured with her own practice, when she pleased to descend to these more private Recreations'. The existence of this circle of intellectuals, among others in her entourage, indicates someone willing to patronize and support scientific pursuits still subject to considerable scepticism;[26] furthermore, she clearly had a mind of her own, for at the same time as she is being attended by Mayerne, a leading member of the College of Physicians, she is also supporting the gardener and herbalist John Parkinson, whose *Paradisi in sole* dedicated to her in 1629 was being suppressed by that college. Even more interesting and raising a number of other questions, the publication was underwritten by Mayerne.

Alethea Talbot, Elizabeth Grey and Henrietta Maria were part of a group of people investigating the new experimental science and interested in new



The title page from *The Queens Closet Opened* (1655).

approaches to knowledge. These women appear, possibly because of their aristocratic status among men on the whole their social inferiors, to have sustained intellectual parity with them and indeed to have been recognized as providing intellectual leadership. There is a handsome portrait of Alethea and her husband Philip, painted in the 1620s by Anthony Van Dyck,[27] that shows the couple: she is seated beside a large globe of the world, and he seated partly behind it holding up a stick in his left hand and pointing, arm across the globe, at the island of Madagascar, as if to say 'Here next'. Yet the two are placed in substantially equal relationship,[28] he occupying a slightly higher position and looking directly at the viewer, she in the foreground, much more substantial as a figure, gazing past the globe, and holding in each hand the instruments of

navigation. If Philip is of today, the source of power and mastery, Alethea is thinking elsewhere, presumably the uncharted future, and is the source of wisdom and knowledge. But what kind of knowledge did her pursuit of science, and that of her sister and friend, offer?

In retrospect it is odd to find so few references to these two sisters, Elizabeth Grey and Alethea Talbot, yet it is perhaps because conventional historical investigation focuses on public records and formal institutions. There has been a failure to assess other social structures, and in terms of science and medicine, the non-formal practices. There is also a profound inability to value domestic work, or work within the household, presumably because it is taken to be the most private activity, the furthest from the public domain. The contexts for their work, discussed below, are multiple and various and the scope too great to offer a comprehensive picture here. But without ignoring the formal and institutional history, I shall focus on the domestic and household structures in particular, and the individuals involved in them.

CONTEXTS: BOOKS

The three-part structure of medicine, household and food receipts common to the books by Elizabeth Grey, Henrietta Maria and the earlier 1639 *Ladies Cabinet Opened*, is unusual. The printed books of the period 1570–1620, during the latter part of which Elizabeth and Alethea were probably writing, offer combinations of medicine and cookery, or cookery and household science, or medicine and household science. Five of the most popular writers of works addressed to women in this period, Thomas Tusser, John Partridge, Thomas Dawson, Hugh Plat and Gervase Markham, emphasize one or two of the three areas, but do not equally weight all three as do the later publications. Yet the way the readers read these earlier books indicates that there was an avid audience for all these topics. For example Hugh Platt's *Delightes for Ladies* (1605) contains household and cookery recipes, and another book possibly by him, *A Closet for Ladies and Gentlewomen* (1602), contains household receipts and medicine, yet these books are frequently bound together indicating a need for each of the areas.[29]

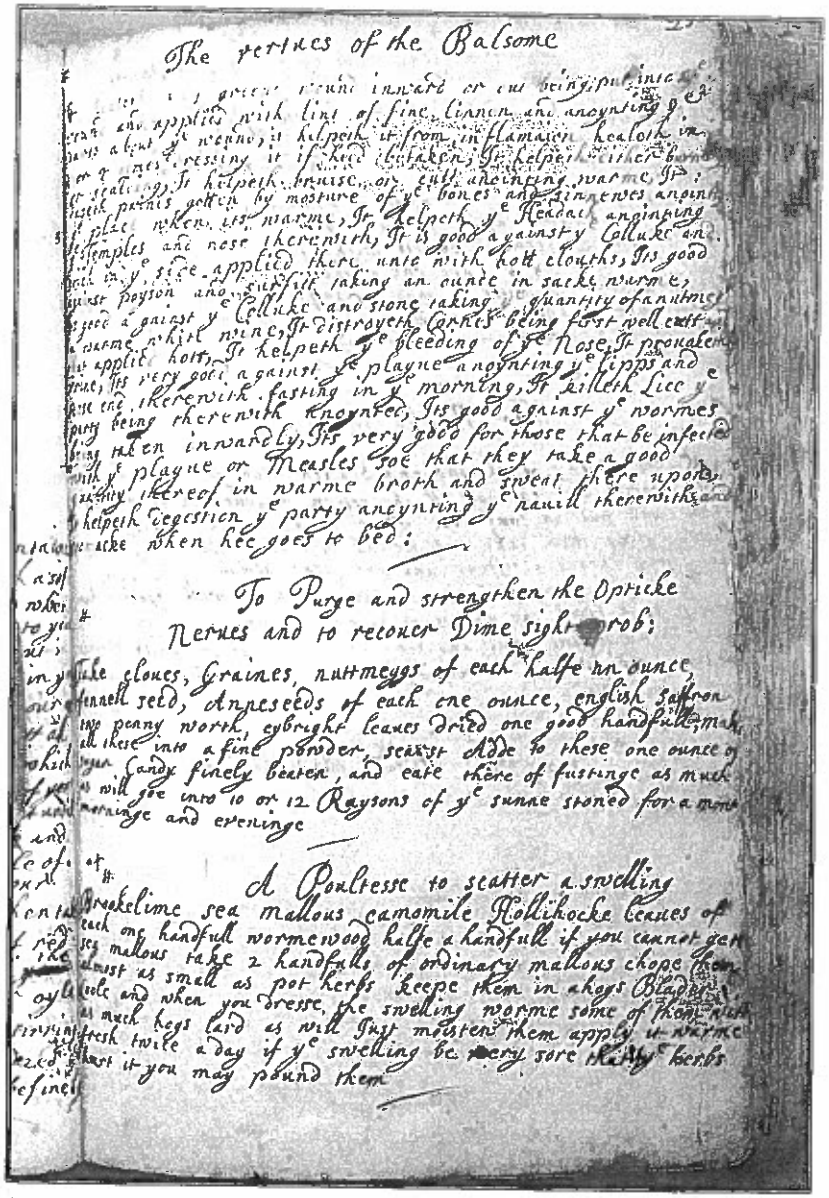
The structure can tell us quite a bit about how women ran their lives during these years. The household receipts which derive from a tradition of books of 'secrets' for men,[30] largely consist of household preparations relevant to women's work within the house. While in the twentieth century an open kitchen cupboard may well contain window cleaner, bleach, washing soda, perhaps polish and varnish; or desktops hold ink, pencils, glue and so on; or the bathroom cabinet house soap, toothpaste, lotions and various beauty aids, in the sixteenth century people could not just go out and buy these items. There were no shops as we would recognize them, although a grocer could supply someone wealthy enough if they lived close enough to make delivery feasible. Otherwise people made them

for themselves. One case in point is ink. I know of no receipt book or manuscript without its receipt for ink. Without ink, of course, neither the book nor the manuscript would exist, yet it is not an easy thing to get that balance of dense blackness with the essential quality of quick drying.

Another traditional genre of published books for men, that of husbandry and estate management, provided a structure for books on household management for women. These works covered at the least brewing, distillation, wine preparation, bread making, dairy-work – which was one of the only activities outside the house that was specifically undertaken by women – and the entire area of conservation and preservation.[31] This last area was of vital importance to the health and the economic soundness of the household, since without it harvested food and slaughtered animals would be wasted; yet without refrigeration or tins or vacuum-packing, the techniques relied on skilful expertise with drying, storing, pickling, brining, and the increasing use of sugar to conserve. Today, when in Europe most of this kind of work is done by large companies, we tend to take the skills for granted, only recognizing them in those jars of a friend's pickle or jam that are sometimes still received at specific times in the year.

The third primary genre of writing influencing the books addressed to women during the second half of the sixteenth century are those on food and diet which up until the middle of the century had been largely medicinal. Because Galenic medicine, which involved an understanding and care of the whole body, dominated sixteenth-century practice, recipes for food preparation and herbal remedy were indistinguishable as cookery or as 'regimen'. The focus on preventive medicine is underlined by a considerable influx of dietaries and regimens for health in the vernacular English that followed Andrew Boorde's *Dietary of Helthe* (1542). When printed as the sole topic for a book they were normally addressed to men, often as a vocational guidance;[32] but they are frequently combined with other topics such as the order of service, or other household receipts, and addressed to women. Food and diet were inextricably part of a woman's responsibility in maintaining the health of the household which was itself often an extended family that was part of a larger community.

However, it is in this area of food and diet that the greatest change takes place in the household work of the early modern world. During the sixteenth century, Paracelsian experimental science, with its associated medical remedies for curing disease or at least relieving the symptoms, begins to find its way into England.[33] It brought with it the ethos of treating the disease retrospectively, rather than preventing its occurrence; and it moved toward general remedies that could cure all people of one particular illness. With it, and with other associated factors of course, the published books begin to show evidence of a distinct split between food as cookery and food as medicine, and between herbal preparations as medicine and chemical preparations as medicine. By 1617 and the incorporation



The vertues of the Balsome

To Purge and strengthen the Opticke Nerues and to recouer Dime sight[ed] prob:

A Poultesse to scatter a swelling

A page from the Duchess of Norfolk's *Household Book*.

of the Society of Apothecaries, the world of print takes food, herbs and cookery to be women's work, while medicine belongs to men.[34]

The areas of household secrets, household management and food, diet and medicine, all overlap not only in the way they fit into daily life but also in their techniques, skills and the knowledge they require.[35] Even today issues of public health policy frequently take in household conditions. Foodstuffs such as sugar were used as medicines, as food, and held a substantial place in household receipts not only for conserving but also as indicators of wealth and status.[36] More directly, each area of practice would have drawn on similar skills in grinding, weighing, distilling, drying, purifying, heating, cooling and so on. With electric mixers, food processors and regulo gas ovens, it is easy to forget that these techniques required considerable expertise to achieve accuracy at a time when for many the open fireplace and the pestle and mortar were their only resource. While the kitchens and distillation rooms appear simple, they have their own technology and require craft to carry out the work.[37]

The works by Elizabeth Grey and Henrietta Maria closely render these different areas of a woman's life and although, as I shall suggest, probably trying to do something a little different, Alethea Talbot's book still implicitly offers advice on the three parts of women's work. Yet how significant is it that the parts of the books directly attributed to these women writers are those on medicinal and household science, and not those parts on household management and food? These texts, along with many other similar manuscripts by women, were not published when they were written, even though there were books on these topics by men addressed directly to women being printed from the 1550s through to 1617. This is the more curious because the books that were printed were very popular. Indeed, among those with the most frequent editions are books explicitly claiming to be from women's manuscripts or oral advice such as Partridge's *The Widdowes Treasure* (1585), Dawson's *The Good Housewives Treasurie* (1588) and Markham's *The English Huswife* (1615). Yet this publication is not indiscriminate. The books are aimed at the urban reader and the upwardly mobile gentlewoman: the large books on country-house management being precisely for this aspiring group. Many of the smaller books are vocational or training books for people going into service and we know that crowds of young people flooded into London in the latter decades of the sixteenth century, many of the women to become domestic servants, and many women and men to set up as apothecaries and doctors.

CONTEXTS: POPULAR AND FAMILIAL MEDICINE

Recent research by writers such as Margaret Pelling has initiated ground-breaking work in the field of popular and community medicine. Pelling's studies outline the wide spectrum of health care available, from members of the immediate family through to the professional physician. Within this spectrum she emphasizes, as has other research, the role of women. Despite some contemporary criticism of their involvement, William Harrison's *Description of England* (1587) clearly notes women's responsibility to have the surgical and pharmaceutical knowledge to maintain the family's health.[38] There has been much work on the earlier history: the treatment of women by the medical guilds and the grocers, including their expulsion from these guilds in fifteenth-century London; the need for their continued practice in many communities; their interaction with the incorporated institutions of physicians and surgeons throughout the sixteenth century; the frequent attempts to stop their practice, especially when it seemed to be commercially profitable.[39] Yet these controls were targeted not only against women, but also against many working men, especially as the physicians began to combine their practice with formal university training. There is continual tension from the early 1500s to 1617 between the College of Physicians, which wanted to control bad practice as well as exercise a monopoly, and the rest of the health-carers or providers in the community.[40] The tension culminates in 1617 in the incorporation of the Society of Apothecaries which was closely overseen by the physicians who, as I have mentioned, produced the London *Pharmacopoeia* to regulate prescriptions. Markham's 1616 translation of a book on country-house management contains a warning to women not to overstep their mark when using the receipts.

The invective against women goes hand in hand with invective against tradesmen, for example:

> common Artificers, as smiths, weavers, and women boldly and accustomably take upon them great cures, and things of great difficulty (*An Act for the Appointing of Physicians and Surgeons*, 1512)

> the rabble of these rude Empirics . . . be no chirurgeons: but mankillers, murderers, and robbers of the people: such are some hosers, tailors, fletchers, minstrels, couters, horseleeches, jugglers, witches, sorcerers, bawds, and a rabble of that sect . . . (*Certain Works of Chirurgerie*)

> Cutlers, Carters, Cobblers, Coopers, Coriars of Leather, Carpenters, and a great rabble of women . . . foresake their handicrafts, and for filthy lucre abuse physick and Chirurgerie. (*A Most Excellent and learned Work of Chirugery*)

> all sorts of vile people . . . make gainefull traffique by botching in physicke . . . not only of Taylors, Shoemakers, Weavers, Midwives, Cookes, and Priests, but Witches, Conjurers, Juglers, and Fortune-tellers. (*A Short Discoverie of the Unobserved Dangers*)[41]

What holds this random group together is their practice of chemical technology. These quacks, empirics, women, shoemakers, tanners and so on, are the people buying the books of household and alchemical secrets, and turning them to commercial uses. An interesting feature of many of these books is the idea of the 'public good', of a 'common wealth' of knowledge to which everyone has a right of access, a need acknowledged in the statute of 1534:

> every person being the King's subject, having knowledge and experience of the nature of Herbs, Roots and Waters, or of the operation of the same, by speculation or practice within any part of the Realm of England, or within any other the King's dominions, to practise, use and minister in and to any outward sore . . . wound, apostemations, outward swelling or disease, any herb or herbs, ointments, baths, poultices and plasters, according to their cunning, experience and knowledge in any of the diseases, sores and maladies beforesaid, and all other like to the same, or drinks for the stone and stangury, or agues, without suit, berations, trouble, penalty or loss of their goods.[42]

With the change in population movements in the sixteenth century, the changes in available foodstuffs and materials brought about by increasing trade and exploration, the changes in lifestyle such as the increase in reading and writing without recourse to an optician; and with the recurrent plagues, these people, who were often cut off from their health-care community at home,[43] needed guidance and free advice and quick cures so they could get back to work.[44]

Perhaps these aristocratic women didn't publish their books because ladies of their status didn't need the receipts: they could afford to buy in the services of physicians, surgeons and apothecaries; they had servants to prepare household goods.[45] However, there is considerable evidence to the contrary. Aristocratic ladies were often highly involved in medicine and household science: one factor may simply be the traditional activities that women carried out in these areas; another may be the practical one that many aristocratic houses were far from the cities in which professional men lived; yet another may be a social factor deriving from the responsibility for the community that devolved on the old and new aristocracy and gentry after the dissolution and reallocation of monastic lands – after all, the abbeys and monasteries had been a primary source of hospital care for many people for centuries.

Among the many aristocratic women noted for their medical expertise is Lady Lisle, cited as having great skill with planting and herbs in the 1530s,[46] yet probably picked out simply because she was the mother of the Earl of Warwick and Northumberland who was highly influential at court from 1540 until he was beheaded for trying to put his daughter-in-law Jane Grey on the throne. From the 1560s and '70s there is Ann Dacre, Lady Arundel and mother-in-law to Alethea Talbot, noted for her personal participation in the preparation of remedies and

receipts on the Arundel estates;[47] she also, as we will discover, was a gardener and herbalist. From the early 1600s, there is Margaret Hoby whose diary tells in detail of her consulting the herbal, preparing medicines, attempting surgery and continually helping the sick in her community.[48]

While there is an on-going history of this health-care work by wealthy aristocratic women engaging with their communities and treating their work frequently as a devotional exercise or social responsibility, the history is largely within the context of the country estate or semi-rural living. With the aristocracy increasingly focused on court life in London from the 1570s, the function of these practices, if women of the court continued these activities, must have changed. A clue may come from Mary Sidney, mother-in-law to Alethea and Elizabeth's sister Mary, who had facilities for scientific preparation that were used by her brother Philip and son William, as well as herself. As Margaret Hannay elaborates, John Aubrey calls her a practitioner of chemistry and says that she was the patron of at least two medical scientists, Adrian Gilbert and Thomas Mouffet.[49] The latter is an unusual choice because Mouffet was responsible for a substantial work on Paracelsian science, *Nosomantica Hippocratea*, published in Germany in 1588, but apparently not well received or translated into English until the 1650s. Mary Sidney's support for such a scientist indicates an unusual commitment to a new scientific approach, and underlines her intellectual rather than social or religious engagement.

CONTEXTS: EDUCATION AND LEISURE

Mary Sidney's intellectual engagement with matters of medical and household science begs the question of how aristocratic women were educated, and considerable background is provided by studies of these women in the name of literature. Recent research has suggested that in the latter part of Henry VIII's reign, possibly with the example of Thomas More's daughters in mind, some members of the court began educating their daughters in the classics to improve their chances of a good marriage. The Cooke sisters, whose father was a reader to Edward VI, were renowned for their learning and whether or not this improved their chances, they did marry well.[50] Norfolk had his three granddaughters highly educated, as did the Seymours and the Somersets.[51]

However, this education in classical humanism appears to have lost its impetus by the 1590s, with one scholar noting that of all the women at court only Arbella Stuart and Lady Oxford spoke Latin.[52] However, while this would appear a considerable underestimation, what is clear is that many of the new aristocracy and upwardly mobile gentry were educating their daughters in vernacular literature and languages instead. During the 1580s and '90s and well into the seventeenth century, there was a considerable production of writing in English by women such as Mary Sidney or Mary Wroth or Emilia Lanyer.[53] The taste for

intellectual enjoyment and craft was still there but transferred into English, and there is evidence that many of these women formed reading circles to exchange and discuss their own writing as a social pastime.[54]

Alethea and Elizabeth Talbot were both educated during this later period of vernacular humanism, and just as they seem to have been trained in the literary skills of poetry and rhetoric, they both also received an education in basic chemical technology: the odd mixture of herbalism, alchemy and early Paracelsian chemistry that seems to have been prevalent. Probably this is not recorded because it was not formally taught.[55] Even boys at grammar school received largely a curriculum in the classics with some arithmetic and possibly some history and geography, but no science or technology.[56] Furthermore, this education in chemical technology and medical preparations was acquired by observation, by many while in service or apprenticeship, and by aristocratic women while in their houses observing their mothers, their own apothecaries, their friends. The vast amount of tacit knowledge upon which the sparse receipts rely underlines this mode of learning, which in common with other domestic knowledge we do not yet have an adequate means of valuing. It also seems reasonable to assume that the women may have formed circles exchanging receipts and experiences, possibly the same as their reading circles. There is evidence that leisure time was a difficult issue, that wealthy women had to work on their increasing isolation and the sense of ineffectualness it brought. For example, tucked away at the back of a copy of Tasso's serious and lengthy work on gastronomy, there is a rare pamphlet entitled *A Dairie Book for Good Housewives* written by one Bartholomewe Dawe in 1588. It is written in dialogue form to the gentlewomen of South Hampshire and advises them on how to make dairy-meats: cheeses, butters, creams, etc. Dawe publishes it, he says in his address to the reader, because women are not only peculiarly associated with dairy-work but also because they need physical activity to prevent them getting 'downe in the dumpes'. The short work also includes a poem by his wife Katharine on the virtues of getting up early. Certainly, circles for discussing anything with intelligent and interested friends would have helped to pass the time, and the practice of naming sources for their remedies even if they were merely from friends rather than well-known authorities, which is initiated in manuscripts by women from this period, seems to indicate that they were discussing possibilities with companions in one way or another.

Aristocratic ladies would have had, therefore, a number of reasons to practise, to write down and discuss receipts and remedies. It passed the time and was a social medium for exchange, a leisure activity. Medicinal and household science is still necessary in terms of country life, both for the women themselves and the community on their estates. Possibly, the responsibility of aristocratic ladies of the sixteenth century for these practices led to emulation of them by the new

courtiers and gentry. For some, the responsibilities were part of a devotional exercise in serving the community. In any event, such work allowed women to function in public in the restricted sense of going out to perform a public service; and in doing so offered them a rare opportunity to leave the private sphere of the house.

At the same time, on the continent in Italy at least two universities trained women in medicine,[57] in other words, through training in medical practice they were most unusually permitted into a public institution. This recognition of women's intellectual capability would undoubtedly have been known in court circles in England, given the extensive travel by the English aristocracy and gentry to Italy at the time.[58] While women were not permitted into the universities in England, vernacular work on medicine, herbal treatment and household secrets, such as John Gerard's *Herbal*, credits women as the source for receipts and remedies.[59] It appears to have been a field where women's conventional domestic work and a growing commercial domain for men came together. There were common areas of knowledge, and hence interchange and some parity of knowledge and experience. Henrietta Maria's intellectual circle was made up of aristocratic ladies and more ordinary gentlemen, with common interests in medical science.

The books attributed to Henrietta Maria and Elizabeth Grey reflect aspects of all these areas of motivation. Both are also small books, octavo in format, and while Grey's is written with some style, neither has pretensions; they are practical products. Alethea Talbot's book is a rather different handsome quarto, and in conclusion it is worth considering its structure and asking again what kind of knowledge it offers. *Natura Exenterata* comes in part from a substantial manuscript[60] that shows its sources to be broadly the same as for many contemporary household manuscripts; indeed several receipts, such as the one for sugared and baked turnip to cure a cough, are the same as Elizabeth Grey's, indicating a common family practice. But the printed book rearranges material and adds rather different sections. It begins with Alethea's receipts and those of her circle, roughly in order of preparation technique: ointments, oils, etc. This is followed by some experimental receipts of the new chemistry, accompanied by chemical symbols. Then come Ann Dacre's receipts from the 1570s to 1580s, thirty to forty years earlier than Alethea's initial writing and a good eighty years before the publication, which include herbal preparations, planting and techniques for distillation. Accompanying the earlier work by Ann Dacre are medical receipts by her contemporaries, including letters of advice on specific ailments that give fascinating insight into doctor–patient relationships *c.* 1570. The printed book concludes with sections on horse-breeding, knitting, sugar cookery, and household science: partly a token gesture to household work but in fact a carefully selected set of instructions on topics relatively new to England in the seventeenth century.

The title page from *Natura Exenterata: or Nature Unbowelled* (1655).

The work is highly significant because it documents the movement from a herbal-based Galenic medicine to a balance of herbal and chemical. In the index the chemical receipts are not listed in a different section, as are the receipts for sugar cookery, but are added separately to the end of each alphabetical letter-listing of herbal remedy. While it is different in presentation from the books by Elizabeth Grey and Henrietta Maria, it is also different from most of the contemporary books by men which are either herbal or chemical in context. *Natura Exenterata* is making claims not only on skill and technology, but also on a new area of knowledge and the process of intellectual enquiry. Its frontispiece, engraved after the manner of the Van Dyck double portrait of the Howards, shows Alethea alone with the instruments of navigation replaced by the pearls of medicine. The knowledge and wisdom she is offering are in anticipation of the new experimental science, yet also rooted in the health care of her community which gives a practical and immediate cast to her use of chemistry and her pursuit of natural philosophy.

Notes

1 The year 1653 marks the advent of published texts in English by women on these matters, but it should be noted that the silence was broken by Nicolas Culpeper's translation of the London *Pharmacopoeia* in 1649.

2 For an account of the generic development of these books, see the section contributed by L. Hunter on 'Household Books' in the third edition of the *Cambridge Bibliography of English Literature, 1500–1700* (forthcoming).

3 Published by a W. I. and usually bound with *A True Gentlewomans Delight*, with which it was published in 1687.

4 Published by W. M. in three parts called *The Queen's Closet Opened: or the pearl of practise*, this being the medical section, along with *A Queen's Delight* and *The Compleat Cook*, in 1655.

5 *Natura Exenterata* (1655).

6 For a consideration of the authorship of this text see, A. Davidson and M. Bell, *The Ladies Cabinet enlarged and opened* (London: Prospect Books, 1985) which is a reprint of the enlarged 1654 edition. As this chapter suggests, the proximity of Lady Ruthven to the other women-writing identically structured texts points to her having some involvement in the construction of the book.

7 Although Elizabeth David made Grey's book one of her first contributions to the periodical *Petits propos culinaires*, which focuses on issues of food history, technology, geography and literature; see David (1979a).

8 See, for example, G. Ziegler and S. Steen, 'Recent Studies in the English Renaissance', *English Literary Renaissance* (1993), pp. 229–74.

9 With the exception of the work by Elizabeth Tebeaux who, in addition to her contribution to this volume, has a forthcoming book on English Renaissance technical writing.

10 J. Burke, *Complete Peerage* (London, 1910).

11 Waller (1993).

12 Clifford (1990), p. 44

13 J. Burke, *Landed Gentry* (London, 1959), p. 2098.

14 For a compelling account see Howard (1969), with printings of many of the letters from this period.

15 Burke, *Complete Peerage* (1910), pp. 256–7.

16 See Howarth (1985).

17 Aubrey (1949/75), p. 271.

18 See Berkowitz (1988).

19 Lewalski (1993), p. 362.

20 See David (1979a).

21 See the account in Lewalski (1993).

22 See Durant (1977).

23 See the Howard letters in Howard (1969), for an account of this incident.

24 Status and power related to gender and status find interesting parallels in Ann Clifford's position on becoming Countess of Pembroke and a landowner; see Hodgkin (1985), p. 157. Furthermore there are parallels with the relationships built up between the clergy and aristocratic women; see Willen (1992).

25 Isler (1968).

26 She also agreed to act as patron to Mary Ward's schools for girls in 1625, probably on religious grounds, but Ward's schools were radical in their plan for the intellectual education of girls; see F. Fraser (1987).

27 This painting is held in Arundel Castle.

28 The letters published in Howard (1969) strengthen this impression of an equable relationship.

29 See L. Hunter (1991) for an extended discussion of the generic development.

30 A helpful bibliography of these books, not only in and for the English, is Eamon (1994).

31 For introductions to the history of conservation and preservation see C.A. Wilson (ed.) (1991b).

32 See Slack (1979).

33 For a broader account of this influence, see MacLean (1972).

34 Isler (1968) p. 7.

35 Underwriting this opinion find Cook (1986) quoting from Clark (1919).

36 Brears (1991).

37 On the importance of the stillroom see Nagy (1988) and the references in that work to Christina Hole, *The English Housewife in the Seventeenth Century* (1953).

38 Quoted in 'The Ladies of Elizabeth's Court', Furnivall (ed.) (1868), p. xc.

39 See, in particular, the work by Hogrefe (1975,1977), Beier (1987), Pelling (1987), Rawcliffe (1995), Warnicke (1983).

40 Cook (1986), p. 46.

41 Beier (1987) and Nagy (1988) cite several of these references.

42 Quoted from Rawcliffe (1995).

43 For an excellent overview of research on relevant conditions see Cook (1986).

44 Further evidence provided for this need may be found in Pelling (1994).

45 Mary Cavendish had her own apothecary, see Aubrey (1949/75), pp. 138–9.

46 Noted in Rawcliffe (1995).

47 See Hanlon (1965).

48 Hoby (1930), pp. 137,167–8; for an account of Hoby's work see Beier (1987), pp. 218ff.

49 Webster (1979).

50 Although it is less often noted that they practised science in their homes: Thomas Bright refers to the '*domus Caeciliana*' of Elizabeth Cooke (Cecil) as a 'university' (in Hoby (1930), p. 255) and she is the dedicatee of Markham's *English Huswife* (1615), possibly even the compiler; this book and Henry Buttes' *Dyets Dry Dinner* (1599) which is dedicated to her sister Anne Cooke Bacon (mother of Francis Bacon the scientist), are the two of the three in this genre directly connected with aristocratic women in the pre-1617 period. The third is really a sub-section of another, Thomas Tusser's *One hundreth Points of Good Husbandry* (1563), and forms *One hundreth Points of Good Huswifry* which was dedicated to Elizabeth Paget in 1570.

51 See Warnicke (1983) for an extended argument of this suggestion.

52 *Ibid.*, p. 130.

53 Lewalski (1993).

54 Schleiner (1994) pp. 3–4.

55 Warnicke (1983) speaks of this as a general reason for lack of recorded education for girls.

56 Grafton and Jardine (1986).

57 Beier (1987).

58 Pelling (1979).

59 Gerard (1597). Jeffers (1967) provides a helpful breakdown of contributors to Gerard's *Herbal*.

60 Held in the Worthing county museum: I thank the curator Dr Sally White for permission to study this manuscript (No. 3574). The Wellcome Institute manuscript (No. 213 Ac 39881) provides an interesting link since it is the housekeeper's book of the Arundel family under Alethea's mother-in-law Ann Dacre. A comparison of the contents of the two manuscript books indicates that the housekeeper was largely responsible for food and cookery, not the scientific and medicinal.