

## REPORT

**A ‘very curious Almanack’: the gift of Sir Robert Moray FRS, 1668**

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## INTRODUCTION

In 1667, only seven years after its foundation, the Royal Society of London acquired the Arundel Library, the gift of Henry Howard, later 6th Duke of Norfolk. This collection originally contained both manuscripts and printed books, but in 1830–32 the Society parted with the Arundel manuscripts,<sup>1</sup> although it retained five medieval volumes, given by other donors, and shortly afterwards acquired a sixth, the gift of James Orchard Halliwell FRS, who compiled a catalogue of the Society’s manuscripts in 1840.<sup>2</sup> They are (in the order in which they were acquired): MS 45, a small folded almanac dating from the late fourteenth or early fifteenth century and given in 1668 by Sir Robert Moray, one of the Society’s founding fellows; MS 17, a fifteenth-century copy of Orosius, *Historia adversus paganos*, given in 1681 by a Mr Thomas Norris of Westminster;<sup>3</sup> MS 24, an early-thirteenth-century copy of Statius, *Thebais*, given in 1692/3 by Nathaniel Vincent FRS;<sup>4</sup> MSS 15 and 28, which originally formed a single late-thirteenth-century compilation containing works of arithmetic and geometry, given by Peter Le Neve FRS in 1718;<sup>5</sup> and MS 47, Halliwell’s own donation, a late-twelfth-century or early-thirteenth-century treatise on arithmetic. The most intriguing of these manuscripts is MS 45, the almanac.

## TWO KINDS OF MEDIEVAL ALMANAC

Folded almanacs must have been common in later medieval England; however, few still exist, because of their small size and the wear and tear caused by folding and unfolding them. Most of those that do survive seem to have been intended for physicians, yet others seem to have been produced for less sophisticated users. The medical almanac typically contains a calendar with accompanying explicatory canon (or rule) in Latin, lunar tables with canons, diagrams of solar and lunar eclipses, and drawings of zodiac man showing the influence of the zodiacal signs on various parts of the human body (for example, Aries rules the head, Pisces the feet), and vein man (consulted when necessary for blood-letting).<sup>6</sup> Astrology had a vital role in medieval medicine, because an understanding of the stars was believed to be essential to determine the best timing for various medical procedures. Not only did Charles V of France establish a joint college of astrology and medicine in 1371, but Bologna University in 1405 also stipulated that all medical students should study astrology for four years. Thus Chaucer’s Physician was ‘grounded in astronomye’ and is praised for his ability to calculate the positions of the zodiacal signs in relation to the planets before treating a patient:

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He kepte his pacient a ful greet deel  
 In hours by his magyk natureel.  
 Wel koude he fortunen the ascendent  
 Of his ymages for his pacient.<sup>7</sup>

It is commonly assumed that all almanacs are medical almanacs. However, almanacs were also produced for the farmer and can be distinguished from the medical almanac by their content and format. It is almanacs of this latter kind that were described in a customs roll of 1428–31 from (King's) Lynn as 'lewde calenders'. They typically contain perpetual calendars illustrated by crude coloured drawings of the saints whose feast days were honoured in the course of the year, and pictorial prognostications concerning the harvest, fruit crops, and cattle. These predictions depended on the dominical or Sunday letter (A–G) with which the year began.<sup>8</sup> Thus, if Sunday fell on 4 January the dominical letter for the year was D, when there would be plentiful crops (depicted as fields of wheat) and a good harvest (shown by a sieve), and the bees would make plenty of honey (a row of beehives). However, if Sunday fell on 1 January, dominical letter A, although the harvest might be satisfactory, farm animals would die (illustrated by a beast lying on its back with its legs in the air). The owner did not have to be a competent reader to be able to understand the information conveyed by these pictures. Hence he, and by extension such an almanac, could aptly be described as 'lewde', for Middle English 'lewde' meant unlearned or illiterate.<sup>9</sup> Almanacs like these were forerunners of the sixteenth-century printed sheet almanac (an example is Cambridge, Magdalene College, F.4.42) sold for only 1d to artisans and country labourers.<sup>10</sup> They became a popular genre with the 'wretched hob-nailed chuff'.<sup>11</sup>

### ROYAL SOCIETY MS 45

Royal Society MS 45 consists of a long rectangular strip of parchment (194 mm tall by 1488 mm long) folded in half and then folded up again 24 times to form a tiny booklet (97 mm × 62 mm). Thus it might once have been kept in a leather carrying case that could be hung from its owner's belt or girdle for easy reference, and to protect it against the elements (the Lynn customs roll includes 'cases pro calenders' among the goods imported). Two medical almanacs (Cambridge, Magdalene College, Pepys MS 1662, written in the fifteenth century, and the mid-fourteenth-century Philadelphia, Rosenbach Museum and Library, MS 1009/24) still have their cases; that of the former is *cuir ciselé* (leather scored when damp with a sharp tool or knife to create a design).<sup>12</sup> However, if folded almanacs are few, the cases in which they were once kept are fewer. If MS 45 were so housed (it shows no sign as to how it might have been suspended) it soon lost its case, for the parts of the parchment that now form its outer 'covers' are extremely dark and leathery.

When MS 45 is first opened we find on one side of the major fold a calendar running from 1 January to 15 June, with each month set out in tabular form over four of the smaller folds. Each monthly table provides, in 10 different columns, the day of the month (in Arabic numerals), the dominical letter, the Roman calendar organized by Kalends, Nones and Ides (used throughout the Middle Ages), the Golden Number, the length of the night and the length of the day, in hours and minutes, the rising of the Sun ('Sol', the Sun's angle at sunrise in relation to the ecliptic), and the date, hour and minute in a year on which the conjunction of the Sun and Moon will occur for three 19-year cycles (figures 1 and 2).

The Golden Number provides the information necessary to calculate the date of Easter, a movable feast fixed in relation to the phases of the Moon and the day of the week, which

Figure 1. Astronomical data for February. The column 'Nox hora' (hours of night) is headed by a face drawn in black ink, and that of 'dies hora' (daylight) by one in red; the column 'Sol' is headed by a bright red Sun. (Online version in colour.)

governs the dates of other movable feasts in the church year. In the Western Church, Easter is celebrated on the Sunday after the first full moon on or after the vernal equinox, 21 March. To determine the date of the paschal moon, computists since the early Middle Ages have made use of the close approximation of the lunar and solar cycles after a lapse of 19 solar years (computed from 1 January 1 BC). The years of a cycle are numbered I to XIX, and the number for each year is the Golden Number.<sup>13</sup> This number can be obtained by dividing the number of the year by 19 and adding 1 to the remainder; thus the Golden Number for the year of writing, 2007, is 13. Early medieval custom divided the day into two periods, from sunset to sunrise and from sunrise to sunset, each of 12 hours. Thus the hours of night and day were of unequal length according to the season.<sup>14</sup> In an age when artificial lighting was limited, the hours of daylight determined the pattern of labour.

One finds on the other side of the main fold coloured drawings of the zodiacal signs, accompanied by a drawing of the appropriate occupation for each month (the illustration for January is missing, and that for December is so rubbed that it is impossible to see). Agricultural labours, as is usual in the cycle of illustrations in medieval calendars, predominate: for instance, for March, a peasant is shown pruning a tree (figure 3); for August, a peasant is depicted gathering corn; for September, a young man is picking apples (figure 4); and for October, a peasant is sowing seed. November is illustrated by a peasant killing a pig.<sup>15</sup> This traditional cycle forms an illustrated guide to the routine tasks of the year in the countryside of planting and harvesting, breeding and slaughtering livestock.

It is only when the parchment strip is unfolded that one finds a perpetual calendar, containing the fixed commemorations of saints' days, Christmas, Epiphany and the Invention of the Cross. However, it does not follow the order of the church year, which begins with the commemoration of St Andrew on 30 November (Advent Sunday being the nearest Sunday to his feast), but runs the length of the strip from January to December. The parchment has been cut half across at intervals so that the strip could be opened out into small squares or 'pages'. Hence each month could be viewed by the user without having to unfold the whole strip completely, so making it easier to handle. Each 'page' contains seven columns, ruled in red, in the widest of which the saints are named (the only written text in this almanac, apart from the names of the zodiacal signs and headings to the columns of data). Each saint is illustrated

Figure 2. Astronomical data for April. (Online version in colour.)

by a small coloured drawing and/or his or her symbol sideways on to his or her name, to fit into the space available. Thus, Peter is accompanied by the keys of heaven, Mark by a lion, and the apostle Paul with a sword, the instrument of his martyrdom. Mary Magdalene is depicted with a jar of the ointment with which she anointed Christ's feet (figure 5). Christmas is marked by a drawing of the Christ Child in His crib, Epiphany by three crowned heads for the Magi, one on top of the other (figure 6), and the Invention of the Cross (3 May) with a cross and a spade, referring to the legend of its discovery by St Helena.

The calendar is colour coded, the colour of ink in which it is written indicating the degree of importance attached to each feast day. Thus a feast can be entered in blue, red, green or black, depending on its grading. The Marian feasts (Purification, Annunciation, Assumption, Nativity and Conception) are all entered in blue, with a portrait bust of Mary surmounted by her symbol of a fleur de lys, whereas other major feasts are in red. The evangelists, apostles and martyrs are named in green. The least important feasts are in black ink.

### WHAT IS THE ALMANAC'S DATE?

The presence of St Anne, mother of the Virgin, entered in red on 26 July (figure 5), suggests a date for this almanac after 1383, when her feast was established in England in honour of the marriage of Richard II and Anne of Bohemia, and the absence of the Visitation (2 July), instituted by Pope Boniface IX in 1389 might be thought to suggest a *terminus ante quem* of that year. The latter is a 'rare example of a new liturgical observance established solely by the fiat of authority',<sup>16</sup> but unfortunately we do not know how rapidly any new feast became widely accepted. Religious changes in the sixteenth century and in particular the 1549–50 Act against Superstitious Books and Images led to the wholesale destruction of medieval service books, and hence the loss of evidence.<sup>17</sup> Therefore the absence of a datable feast cannot establish definitively the date before which a manuscript must have been produced. Nevertheless, the absence of David and Chad, adopted in 1415, together with the fact that George, England's patron saint, is entered only in black, seems to point towards a date before then. Although George was known in Anglo-Saxon England, it is widely assumed that it was returning Crusaders who helped to popularize his cult, yet it was not until after the Battle of



Figure 3. March pruning a tree; on the next fold is the zodiacal sign Taurus (21 April to 21 May). (Online version in colour.)

Agincourt in October 1415 that his feast was included in English calendars as one of the major feasts or 'red letter days' of the year.<sup>18</sup>

A date towards the end of the fourteenth or the beginning of the fifteenth century accords well with the style of tall pointed helmet that St George is depicted wearing.<sup>19</sup> Similarly, the costumes worn by figures in the zodiac illustrations are characteristic of this period. The young squire shown for the occupation of April wears a short parti-coloured doublet and hose with long exaggerated points to his shoes, a fashion popular from about 1395 to 1410. Virgo has a long green gown with close-fitting bodice and red buttons, and a plain headdress with straight edges that hug her cheeks, giving her face a square appearance.<sup>20</sup> Styles in women's headwear became more elaborate in the fifteenth century.

#### THE ALMANAC'S ORIGIN IS UNKNOWN

As well as providing a clue to a manuscript's date of production, the presence of a particular saint in a medieval calendar may sometimes suggest where a manuscript was written, or indicate where it was intended to be used. Some saints are universal, but the cult of others was more localized. St Everild, for instance, is known only from York service books, whereas St Eorcenwald suggests that a manuscript had been produced in the diocese of London, where he had been bishop (?675–693). In the present calendar the only significant entries are those of 'Edwardi regis' and 'Translacio Edwardi Regis' (20 March, 13 October), both entered in



Figure 4. September is picking apples; on the next fold is the zodiacal sign Scorpio (24 October – 22 November). (Online version in colour.)

red, and ‘Translacio Mildrede’ (13 July) in black (figure 5). The importance attached to Edward the Confessor suggests the London area, whereas Mildred’s inclusion could point to Kent, because she was an Anglo-Saxon princess (d. *ca.* 700) who had been abbess of Minster-in-Thanel where she was first buried. Her relics were then translated to Canterbury, where St Augustine’s Abbey and St Gregory’s Priory later disputed who held them.<sup>21</sup>

If one could identify the roughly sketched coat of arms (roundels within a saltire between three cinquefoils and a crescent gules) on a shield held between them by the heavenly twins (Gemini), it might be possible to confirm a Kentish origin for this almanac (figure 7). However, the quality of the drawings and their crudely coloured nature do not suggest that its owner was armigerous. It is not impossible that the arms were simply made up for decorative purposes.<sup>22</sup>

#### AN UNUSUAL SYSTEM OF NUMBERS

Alongside the column containing the names of the saints (and at right angles to their portrait busts) the other columns on a ‘page’ contain the dominical letters and an unusual means of representing numbers. Thus 0 stands for ten, ( for five, and . for one. The only other manuscript known to me with the same system of numeration is that at Oxford (Bodleian Library, Rawlinson MS D. 939), a contemporary almanac datable to 1389 and thought to have belonged to a manorial official on the estates of the Benedictine abbey of Evesham.<sup>23</sup> Like other ‘ciphers’, this system of circles, brackets and points is not one that could have been used to make computations.

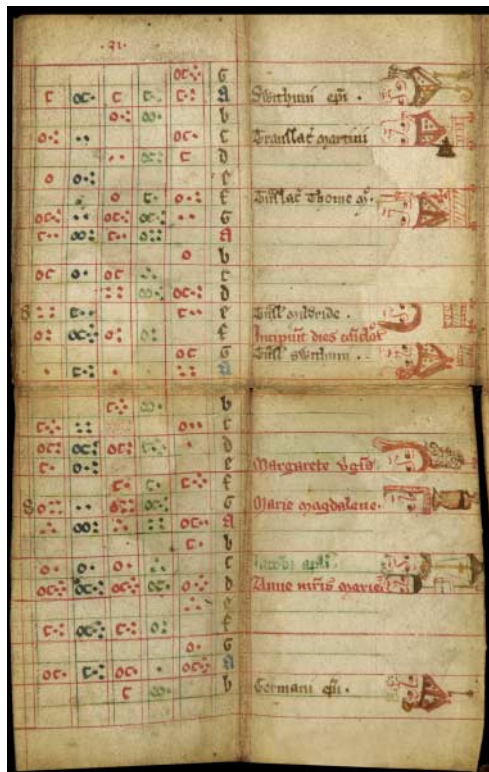


Figure 5. Calendar 15 July (St Swithin's Day) to 31 July (St Germanus, bishop of Auxerre). The translation of Mildred (13 July) is entered in black, and over her head is her shrine; the translations of St Martin, St Thomas à Becket and St Swithin (4, 7 and 15 July) are similarly indicated. The churchmen all wear mitres. (Online version in colour.)

### AN ANOMALOUS ALMANAC

It will be evident from the description above of the content of MS 45 that real expertise was expected of its original owner to be able to interpret the tables of astronomical data. This information is expressed by Arabic numbers, which were not commonly used before the end of the Middle Ages but which the owner was expected to recognize. However, they do not contain all the information that a trained astronomer would have required, because there is no tabulation of the motion of the planets, enabling him to find more easily their positions in the heavens for a given time. Such further data were also useful to the physician, given the medieval belief that the successful outcome of medical intervention depended on the stars. Other information that one would expect in an almanac intended for a doctor is also missing, such as the lunar tables and tables of eclipses, zodiac man and vein man.<sup>24</sup>

It can be objected that because the tables in MS 45 provide data only for 1 January to 15 June that it has been torn, losing some of its content. Damage might easily have occurred, because this strip is today over four feet long (1488 mm) and so is not easy to handle; when even longer it would have been inconvenient for the user to find the information he wanted quickly. However, not only is explicit medical information absent (the tables assist primarily in the calculation of Easter) but in those undoubted medical almanacs that I have seen, both the format of the manuscript and the layout of the calendar are also different.



Figure 6. Calendar 1 January to 28 February. A circular knife indicates the Circumcision (1 January), and the three crowned heads the Magi (6 January). The Marian feast of Purification (2 February) is entered in blue; over the crowned head of the Virgin is her symbol of a fleur-de-lys. Above the portrait bust of Peter, 'Cathedra Petri' (22 February), are the keys of heaven. (Online version in colour.)

The medical almanac at London, Wellcome Library MS 40, consists of seven square sheets of parchment, 270 mm × 85 mm, each folded in half and then folded again three times to produce an oblong format, *ca.* 140 mm × 50 mm.<sup>25</sup> Text and drawings are made on only one side of a sheet, a title indicating the content of the individual sheet being written on its otherwise blank dorse. The folded sheets were piled one on top of the other and sewn together onto a thick parchment tab. Wellcome MS 40 was clearly designed to hang from a belt, because the remains of a thong dangle from the tab. The physician could refer to it without removing it from his belt because the sheets were sewn with their content upside down so that, when they were lifted up, the text was the right way round to be read. This more practical and convenient format is also adopted by other examples (British Library, Additional MSS 17358, 28725; Harley 937, 3812; Sloane 807 and 2250).<sup>26</sup>

Most of these contain the 'Kalendarium' of John Somer, a Franciscan friar who composed a calendar and accompanying tables at Oxford in 1380.<sup>27</sup> His calendar and tables are combined in a series of columns, with the astronomical data given either side of the widest column containing an unillustrated calendar, but in the Society's almanac the calendar of saints and the data are set out separately. For almanacs with a similar layout to that of MS 45, namely set out lengthways with illustrations of the saints, we must look to the 'lewde calendars' that seem to have been intended for those who could not read or could do so only with difficulty. Like MS 45, the pictorial calendars in the British Library MSS Add 17367,





Figure 7. Gemini (22 May to 21 June), the heavenly twins, wear particoloured hose; May is shown hawking. (Online version in colour.)

70517 and Egerton 2724 are found on long parchment strips, whereas in MSS Harley 2332 and Royal 17.A.xvi, where the almanacs occur in book format, the calendar's layout imitates the strip format, because each month runs across a double-page spread headed by drawings of the saints. Not only the calendar but also other information in these almanacs is conveyed entirely, or almost entirely, by pictures, unlike the medical almanacs, which (apart from Harley 937, in which the text is in Middle English) have extensive text in Latin prose.

#### SIR ROBERT MORAY AND THE ALMANAC

An inscription on Royal Society MS 45 in a nineteenth-century hand (?Halliwell's) reads 'Presented by Sir Robert Moray, July 9 1668'. This statement is derived from the minutes in the Society's Journal Book of the meeting held that day: 'Sir Robert Moray presented the Society with an old, very curious Almanack, wherein Thomas a Bicket [*sic*] was the youngest saint. It was ordered to Mr Hook for the library.' However, the earliest catalogue of the library, the *Bibliotheca Norfolciana* compiled by William Perry, library keeper (1678/9–1696), makes no mention of it. In its folded state it is such a tiny item that it was evidently overlooked.<sup>28</sup> It is first recorded as 'Almanach in pergameno' in a handwritten continuation of the *Bibliotheca Norfolciana*, drawn up by Mr Forster (or Foster), a bookseller, who in 1685 was paid 4/- a day for the time it had taken him to catalogue the library.<sup>29</sup> This succinct description is repeated in the *Catalogi librorum manuscriptorum Angliae et Hiberniae* of 1697, which otherwise reprints Perry's catalogue.<sup>30</sup>

Where did Moray find this anomalous almanac, with tables that demanded some learning but otherwise relied solely on pictures to convey information? Perhaps it was by following the advice of his friend the diarist John Evelyn FRS, who recommended that one should not ‘disdain the rum’aging sometimes of the most neglected corners of Shops, & other obscure places, howeuer couer’d with dust & cobwebs, whereeuer one may heare or suspect some old Parchments may haue ben cast ...’. Although Evelyn was thinking in terms of rescuing classical texts from destruction and loss, yet he went on to say that even if country and illiterate people brought one ‘onely fragments & single sheetes, on whatsoever subject, bearing the face and character of Antiquitie, reject them not; since it is possible one may at leasure find something amongst them to recompence ones curiositie ...’.<sup>31</sup> We learn from one of Moray’s letters to his friend Alexander Bruce, 2nd Earl of Kincardine, that Moray enjoyed visiting second-hand bookshops, ‘out of doubt for old ones of all kinds whatsoever there is no place in Christendome better furnisht than Duke Lane [or Duck Lane, now Little Britain, Smithfield] in London’, and in another he teased the sick Bruce for reading old ballads such as *Tom Thumb* or *Adam Bell*, ‘Nay by your love to astronomy I think I may guess that you would have been pleased to tune [*sic*] over old almanacks to begule as much time as you employed in reading my letters ...’.<sup>32</sup>

Moray’s own ‘love to astronomy’ is attested not only in his letters but also by his reports in the Society’s collections on astronomical observations that he had undertaken personally. His interest in the stars is likewise reflected in his adoption of a pentacle or five-pointed star as his Mason’s mark, a symbol later adopted by Evelyn.<sup>33</sup> Did this interest prompt him to acquire the ‘curious Almanack’? Why did he choose to present it to the Society? His remark to Bruce suggests that he thought browsing through an almanac a pleasant diversion for an invalid, not for study for any practical application, although astrology still retained its hold on the popular mind, even in medicine. The empiric William Salmon’s *Synopsis medicinae* published in 1671 went into three further editions during the century.<sup>34</sup> However, whereas Fellows such as Elias Ashmole and John Aubrey were enthusiastic about astrology, Thomas Sprat in his *History of the Royal Society*, approved by Moray among others, unreservedly condemned it as ‘a disgrace to Reason’.<sup>35</sup>

#### THE ALMANAC AS A CURIOSITY

The adjective ‘curious’ applied in the Journal Book to the almanac reveals the Society’s view of Moray’s donation. It was a curiosity and, as such, to be housed in the library in conformity with prevailing notions of learned civility. The ethos that flourished among the virtuosi who constituted the Society’s earliest members encouraged the cultivation of learning and the accumulation of curiosities. Such a collection consisting of ‘Bookes, Coynes, Medalls, Stones, Pictures, Mechanicks, Antiquities and all and every other the Raryties and Curiosities of what sort or kind so ever’<sup>36</sup> as that which Ashmole acquired with the Tradescant collection exemplified the search for knowledge and understanding of the world. Sir Kenelm Digby, another of the founding Fellows, also assembled a large collection of art, antiquities and medieval manuscripts. For Evelyn, who was instrumental in establishing the Society’s library and drew up, at Moray’s request, a subject classification for it, it was ‘the very Essence of a Library, to have a great number of *Manuscripts*’, but also ‘*Mathematical Instruments, Globes, Mapps, Spheres, Pictures, Animals, Stones, and other curiosities as well Artificial as Natural ...*’.<sup>37</sup> The Society’s library was at first a gentleman’s library rather than a purely scientific one, and as such its contents reflected these attitudes. At Evelyn’s prompting, in the

year before Moray's gift, it had acquired the Arundel collection, and, although the need for such a wide-ranging library was soon questioned, in 1668 Moray's almanac was seen as an appropriate addition to it.

Unlike his contemporaries and other early members of the Society—Robert Hooke, Robert Boyle, Ashmole or Digby—we do not know what other books or manuscripts Moray may once have had, because he died intestate and, according to a contemporary report of his death (in 1673), 'he was found to be possessed of no more than four shillings in all the world.'<sup>38</sup> Only MS 45 remains as a witness to show he acted on Evelyn's advice and was a 'snapper-up of unconsidered trifles'.

#### ACKNOWLEDGEMENTS

I am grateful to Professor M. B. Parkes and Professor Linda Voigts for their helpful comments and criticisms. Errors that remain are my responsibility.

#### NOTES

- 1 See Linda Levy Peck, 'Uncovering the Arundel Library at the Royal Society: changing meanings of science and the fate of the Norfolk Donation', *Notes Rec. R. Soc.* **52**, 3–24 (1998); for a brief general history of the Society's Library, see Marie Boas Hall, *The Library and Archives of the Royal Society 1660–1990* (The Royal Society, London, 1992).
- 2 James Orchard Halliwell, *Catalogue of the Miscellaneous Manuscripts preserved in the Library of the Royal Society* (pr. Richard & John E. Taylor, London, 1840). For more recent descriptions than Halliwell's, see N. R. Ker, *Medieval manuscripts in British libraries* (Clarendon Press, Oxford, 1969), vol. 1, pp. 231–232.
- 3 The MS is unlisted by J. M. Bately and D. J. A. Ross, 'A checklist of manuscripts of Orosius' "Historiarum Adversum Paganos Libri Septem" ', *Scriptorium* **15**, 329–334 (1961). I have been unable to identify Mr Norris.
- 4 On whom see Matt Jenkinson, 'Nathanael Vincent and Confucius's 'Great Learning' in Restoration England', *Notes Rec. R. Soc.* **60**, 35–47 (2006). Like the Orosius, Statius's *Thebais* was widely disseminated in the Middle Ages; cf. Birger Munk Olsen, 'La réception de Stace au moyen âge (du IX<sup>e</sup> au XII<sup>e</sup> siècle)', in *Nova de veteribus. Mittel- und neulateinische Studien für Paul Gerhard Schmidt* (eds Andreas Bihrer and Elisabeth Stein), pp. 230–246 (K. G. Saur, Munich, 2004).
- 5 Thomas Woodcock, 'Le Neve, Peter (1661–1729)', in *Oxford Dictionary of National Biography* (eds H. G. Matthew and Brian Harrison), vol. 33, pp. 341–343 (Oxford University Press, 2004).
- 6 Hilary M. Carey, 'What is the folded almanac? The form and function of a key manuscript source for astro-medical practice in later medieval England', *Social Hist. Med.* **16**, 481–509 (2003); also her 'Astrological medicine and the medieval folded almanac', *Social Hist. Med.* **17**, 345–363 (2004); C. H. Talbot, 'A mediaeval physician's vade mecum', *J. Hist. Med.* **16**, 213–233 (1961); and Faith Wallis, 'Medicine in medieval calendar manuscripts', in *Manuscript sources of medieval medicine* (ed. Margaret R. Schleissner), pp. 105–143 (Garland, New York, 1995). See also J. P. Gumbert, 'Über Faltbücher, vornehmlich Almanache', in *Rationalisierung der Buchherstellung im Mittelalter und im der früher Neuzeit* (ed. Peter Rück), *Elementa Diplomatica*, vol. 2, pp. 111–121 (Institut für Historische Hilfswissenschaften, Marburg an der Lahn, 1994). For an illustration of zodiac man, see P. R. Robinson, *Catalogue of dated and datable manuscripts c.888–1600 in London libraries* (British Library, London, 2003), vol. 2, pl. 166; for one of vein man, see Peter Murray Jones, *Medieval medicine in illuminated manuscripts*, revised edn (British Library, London, 1998), fig. 87.

- 7 *The Canterbury Tales*, General Prologue, ll. 414–418 (in *The Riverside Chaucer*, 3rd edn, gen. ed. Larry D. Benson (Houghton Mifflin Company, Boston, MA, 1987)). For astrology's role in medieval medicine, see Roger French, 'Astrology in medical practice', in *Practical medicine from Salerno to the Black Death* (ed. Luis García-Ballester *et al.*), pp. 30–50 (Cambridge University Press, 1994).
- 8 In ecclesiastical calendars the seven letters A–G are allotted to the days of the year in rotation (1 January = A, etc.), which coincides with the Sundays in a given year.
- 9 Cf. P. R. Robinson, '“Lewde calendars” from Lynn', in *Tributes to Kathleen L. Scott. English medieval manuscripts and their readers* (ed. Marlene Villalobos Hennessy) (Harvey Miller/Brepols, Turnhout, in the press). For examples of such calendars, see Oxford, Bodleian Library, MS Rawlinson D. 939 (discussed by John B. Friedman, 'Harry the Haywarde and Talbat his Dog: an Illustrated Girdle Book from Worcestershire', in *Art into life: collected papers from the Kresge Art Museum Symposia* (eds Carol Garrett Fisher and Kathleen L. Scott), pp. 115–153 (Michigan State University Press, East Lansing, 1995)), and London/Oslo, Schøyen Collection, MS 1581 (illustrated in *The story of time* (ed. Kristin Lippincott *et al.*), Catalogue of an exhibition held at the National Maritime Museum, no. 065 (Merrell Holberton, London, 1999)).
- 10 *A Short Title-Catalogue of Books printed in England, Scotland, & Ireland and of English Books Printed Abroad 1475–1640*, 2nd edn revised and enlarged (eds W. A. Jackson, F. S. Ferguson and Katharine F. Pantzer), vol. 1, no. 388 (Bibliographical Society, London, 1976); illus. *Gothic: art for England 1400–1547* (eds Richard Marks and Paul Williamson) (V and A Publications, London, 2003), p. 302, no. 169. See R. C. Simmons, 'ABCs, almanacs, ballads, chapbooks, popular piety and textbooks', in *Cambridge history of the book in Britain*, vol. 4 (eds John Bernard and D. F. McKenzie, with the assistance of Maureen Bell), p. 509 (Cambridge University Press, 2002).
- 11 Ben Jonson's description of Sordido, a character in his play *Every Man out of his Humour* (see G. A. Wilkes (ed.), *The complete plays of Ben Jonson* (Clarendon Press, Oxford, 1981), vol. 1, p. 283), whose recreation was 'reading of almanacs'.
- 12 Cf. Rosamond McKitterick and Richard Beadle, *Catalogue of the Pepys Library at Magdalene College Cambridge*, vol. 5, part i (*Medieval manuscripts*), pp. 28–29 (D. S. Brewer, Woodbridge, 1992); Carey, *op. cit.* (note 6), p. 489 and fig. 1 illus. Pepys's carrying case. For the Rosenbach MS, see *Sixty Bokes Olde and Newe: manuscripts and early printed books from libraries in and near Philadelphia illustrating Chaucer's sources, his works and their influence* (ed. David Anderson) (New Chaucer Society, Knoxville, TN, 1986), item 49 and figure.
- 13 The clearest exposition of medieval reckonings of time is by C. R. Cheney, *Handbook of dates for students of English history* (Royal Historical Society Guides and Handbooks no. 4); I have used the 1961 edition. England did not adopt the Gregorian calendar (New Style) until 1752.
- 14 From the fourteenth century onwards when clocks began to be built in churches and towns, hours uniform in length were gradually adopted; see further Gerhard Dohrn-van Rossum, *History of the hour: clocks and modern temporal orders* (transl. Thomas Dunlap) (Chicago University Press, 1996); and John North, *God's clockmaker: Richard of Wallingford and the invention of time* (Hambledon and London, London, 2005). See also Jean Leclercq, 'The experience of time and its interpretation in the late Middle Ages', *Stud. Medieval Cult.* 8–9, 137–150 (1976).
- 15 See Bridget Ann Henisch, 'In due season: farm work in the medieval calendar tradition', in *Agriculture in the Middle Ages* (ed. Del Sweeney), pp. 309–336 (University of Pennsylvania Press, Philadelphia, 1995).
- 16 R. W. Pfaff, *New liturgical feasts in later medieval England* (Clarendon Press, Oxford, 1970), p. 40.
- 17 See C. E. Wright, 'The dispersal of the libraries in the sixteenth century', in *The English library before 1700* (eds Francis Wormald and C. E. Wright), pp. 148–175 (Athlone Press, London, 1958), on the consequences of the Act.

- 18 *Butler's lives of the saints: new full edition* (gen. ed. D. H. Farmer) (Liturgical Press, Collegeville, MN, 1999), vol. 4, p. 163.
- 19 Cf. Francis M. Kelly and Randolph Schwabe, *A Short History of Costume and Armour, chiefly in England, 1066–1485* (B. T. Batsford Ltd, London, 1931), vol. 1, p. 63 and fig. 39.
- 20 C. Willet Cunnington and Phillis Cunnington, *Handbook of English Medieval Costume*, 2nd edn (Faber & Faber, London, 1969), pp. 85 and 95.
- 21 For Mildred, see D. W. Rollason, *The Mildrith legend: a study in early medieval hagiography in England* (Leicester University Press, 1982).
- 22 I have been unable to identify it in John W. Papworth, *An Alphabetical Dictionary of Coats of Arms forming an Extensive Ordinary of British Armorial* (ed. Alfred W. Morant), see 'saltire' (T. Richards, London, 1874).
- 23 Friedman, *op. cit.* (note 9), p. 120. It is different from the Cistercian system discussed by David A. King, *The ciphers of the monks: a forgotten number-notation of the Middle Ages* (Franz Steiner Verlag, Stuttgart, 2001).
- 24 Thus Halliwell's view (*op. cit.* (note 2), p. 12) that 'The *homo signorum* and the *homo venarum* appear to be deficient.'
- 25 The folds are clearly visible in Robinson, *op. cit.* (note 6), vol. 2, pl. 166.
- 26 Harley 937 is illustrated both in *The New Palaeographical Society: facsimiles of ancient manuscripts*, 2nd series (ed. Edward Maunde Thompson *et al.*), pl. 72 (Oxford University Press, London, 1913–30), and in Andrew G. Watson, *Catalogue of dated and datable manuscripts c.700–1600 in the Department of Manuscripts, the British Library* (British Library, London, 1979), vol. 2, pl. 406; for Sloane 2250, see Jones, *op. cit.* (note 6), fig. 45.
- 27 For which see Linne R. Mooney (ed.), *The Kalendarium of John Somer* (The Chaucer Library) (University of Georgia Press, Athens, GA, 1998).
- 28 *Bibliotheca Norfolciana: sive Catalogus Libb. Manuscriptorum & Impressorum* (pr. Richard Chiswell for the Royal Society, London, 1681); although this is chiefly a catalogue of the Arundel library, books given by other early donors are included.
- 29 Boas Hall, *op. cit.* (note 1), p. 6. MS 45 is item 464 in Forster's list.
- 30 [E. Bernard], *Catalogi librorum manuscriptorum Angliae et Hiberniae*, vol. ii, p. 84, no. 3461 (Sheldonian Theatre, Oxford, 1697). For criticism of this volume's treatment of the library, see Joseph Yeowell (ed.), *A Literary Antiquary. Memoir of William Oldys, Esq., Norroy King-at-Arms, Together with his Diary, Choice Notes from his Adversaria, and an Account of the London Libraries* (Spottiswoode & Co., London, 1862), p. 80. For Oldys, see Paul Baines, 'Oldys, William (1696–1761)', in *Oxford Dictionary of National Biography*, vol. 41, pp. 707–710; the MS of his account is now at University of Glasgow, Hunterian Library, MS Hunter 309 (U.7.3).
- 31 John Evelyn, 'Of Manuscripts: an unfinished treatise', in *Memoirs illustrative of the Life and Writings of John Evelyn, Esq., FRS* (ed. William Bray), vol. 2, pp. 339–340 (Henry Colburn, London, 1818).
- 32 David Stevenson (ed.), *Letters of Sir Robert Moray to the Earl of Kincardine, 1657–73* (Ashgate Publishing, Aldershot, 2007), pp. 106 and 162.
- 33 David Stevenson, 'Masonry, symbolism and ethics in the life of Sir Robert Moray, FRS', *Proc. Soc. Antiquaries Scotl.* **114**, 405–431 (1984).
- 34 *Synopsis medicinae, or, a compendium of astrological Galenical and chymical physick* (printed by W. Godbid, for Richard Jones ..., London, 1671). For Salmon, see Philip K. Wilson, 'Salmon, William (1644–1713)', in *Oxford Dictionary of National Biography*, vol. 48, pp. 734–735. By the end of the century astrological medicine had ceased to be taken seriously; cf. A. Chapman, 'Astrological medicine', in *Health, medicine and mortality in the sixteenth century* (ed. Charles Webster), pp. 275–300 (Cambridge University Press, 1979).

- 35 *History of the Royal Society*, p. 364 (printed by T. R. for J. Martyn and J. Allestry, London, 1667); cf. Patrick Curry, *Prophecy and power: astrology in early modern England* (Princeton University Press, 1989), pp. 59–60.
- 36 The National Archives, Kew, Chancery Proceedings L33/221/774.
- 37 *Instructions Concerning Erecting of a Library ... by Gabriel Naudeus, P. And now Interpreted by Jo. Evelyn, Esquire* (printed for G. Bedle, and T. Collins ... and J. Crook, London, 1661), pp. 53 and 85. See further Paul A. Nelles, 'Libraries, books and learning, from Bacon to the Enlightenment', in *The Cambridge History of Libraries* (gen. ed. Peter Hoare), vol. 2, pp. 28–31 (Cambridge University Press, 2006).
- 38 *Report on the Manuscripts of the late Reginald Rawdon Hastings* (Historical Manuscripts Commission 78) (HMSO, London, 1930), vol. 2, pp. 381–382.