**WHAT IS THE FOLDED ALMANAC? THE FORM AND FUNCTION OF A KEY
MANUSCRIPT SOURCE FOR ASTRO-MEDICAL PRACTICE IN LATER
MEDIEVAL ENGLAND.¹**

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ABSTRACT

This article provides an account of an important source for late medieval English medicine and astrology, namely the folded almanac, also termed, less correctly, a physician's folded (or folding) calendar, *vade mecum* or girdle book. On the basis of a discussion of 29 surviving examples of the folded almanac a number of questions are raised about the way these manuscripts were used in astro-medical practice. This article reviews what this group of manuscripts should be called, what kind of manuscript they are, and assesses the way in which they were worn on the body. It establishes that the folded almanac was an English innovation and that many include a new, updated version of the calendar and lunar data of John Somer. A subsequent

article will describe the working components of the folded almanac and the way in which they were used in the practice of astrological medicine.

KEYWORDS: medieval medicine, astrology, almanac, calendar, John Somer, folded manuscript, girdle book, physician.

INTRODUCTION

Medieval and modern authorities agree on the central importance of astrology for a full understanding of medieval medicine. Citing Hippocrates, medieval authors argued that whoever called himself a doctor, yet knew no astrology, was like a blind man.² Today, it might equally be argued that whoever studies medieval medicine, yet knows not astrology, is also working in the dark. But although the need for a more complete study of medical astrology has been evident since 1913 when Mercier first broached the topic,³ neither survey nor specialist studies of medieval English medicine have gone very far to supply it.⁴ Rawcliffe, Siraisi and Getz are relatively generous in their discussion of the medical applications of astrology and magic, but they have only limited space to devote to the technical side of astrological medicine. The fullest accounts of medical astrology have come from scholars of Middle English scientific prose including the computus, lunaries, calendars and almanacs.⁵ There are now a good number of modern critical editions of a range of Latin and vernacular astro-medical texts.⁶ Attention has also been directed at some aspects of astro-medical iconography, such as the images of the Zodiac Man (*Homo signorum*)⁷ and Vein Man

(*Homo venarum*).⁸ Overall, however, understanding of astrology has been acquired as a by-product of research into related fields, not as something integral to the discipline.

A close study of astrology, and books, data and instruments on which it depended, may be able to illumine areas of medical therapeutics about which we have only limited information. Pursuing this line of reasoning, this article provides an assessment of 29 surviving examples of a tiny but very interesting class of manuscripts, a number of which were probably designed and produced to meet the needs of medical practitioners and service their itinerant practice of medical astrology. For reasons detailed below, these manuscripts will be referred to from this point as ‘folded almanacs’.

Scholars have long been intrigued by the folded almanac, a class of small manuscripts that contains calendrical, astrological and medical elements and which appears to have been designed to hang from the belt. Over forty years ago, Talbot provided a careful description, with a partial edition, of a folded almanac that ‘came by chance into the hands of the writer’.⁹ Voigts points out that the Talbot manuscript has remained in private hands though the photographic plates on deposit in the Wellcome Institute have now been reproduced many times and this has led to the occasional assumption that the Talbot almanac is part of the Wellcome collection.¹⁰ Talbot tempered his praise for the skill of the execution of what he termed a ‘physician’s vade mecum’ with a damning assessment of the superstitious medical principles which, in his opinion, it represented. Since Talbot’s discussion, there have been a number of limited investigations of the folded almanac, almost all of which make the assumption that these manuscripts were designed for the particular use of medical practitioners.¹¹

Despite their attraction for bibliophiles and scholars, folded almanacs have not been well understood either as a class of manuscript, or as a tool in the supposed practice of astrological medicine. This article attempts to redress this by determining what this group of manuscripts should be called, establishing what kind of manuscript they are, and considering how they might have been worn on the body. These issues are addressed in part 1. Part 2 describes the working components of the folded almanac and the way in which it was employed in the practice of astrological medicine. A later article will consider the audience of the folded almanac and what they can reveal about astrology, medicine and the calendar in the worldview of their owners and users.

PART 1 - WHAT IS THE FOLDING ALMANAC?

Research on the folding almanac has been bedevilled with problems of nomenclature. In English catalogues and scholarly discussion, individual examples have been labelled: folding (or folded) almanac (or almanack), *vade mecum*, girdle book, girdle almanac, belt calendar, astronomical girdle book, liturgical calendar, medical girdle book, physician's folding calendar and almost any other combination of these terms. Voigts, for example, in the useful footnotes to her discussion of these manuscripts refers to different examples in succession as *vade mecum*, girdle book, folding almanac and, in quotes, 'folded medical calendars'.¹² Clarity is needed in this area.

1. Calendar, Kalendarium or Almanac

Catalogues employ the terms 'calendar' and 'almanac' more or less interchangeably to refer to medieval calendrical manuscripts, but the terms have

somewhat different meanings. A medieval liturgical calendar supplied the means to calculate when, in any particular year, the major fixed and movable Christian feasts were to be celebrated.¹³ From Carolingian times, Latin calendars often included astronomical and astrological data.¹⁴ By the twelfth century, a calendar manuscript that contained more complex, scientific texts and data was sometimes called an almanac, a word that was first used in this sense by Roger Bacon and which may derive from Iberian Arabic.¹⁵ In England, the transformation of the calendar into an almanac was supported by the work of a series of learned calculators who worked with noble patronage to create a robust working tool for simple lunar, solar and astrological operations.¹⁶ By the late fourteenth century, as Eisner points out, the meaning of the terms *kalendarium* and *almanac* had come to overlap, though it is likely that medieval users of the folding almanac would have identified both the text and the object as *kalendarium*.¹⁷ While the folded manuscripts considered in this article can be referred to quite correctly as either calendars or almanacs, there is merit in following the example of modern cataloguers such as N. R. Ker who designates the two examples in the Edinburgh Royal Observatory as almanacs rather than calendars.¹⁸ Folded almanac or almanack is also the most usual term employed in the catalogues of the British Library which houses the greatest number (ten) held by any single repository.

Making a verbal distinction between the older, liturgical calendar and the later medieval, scientific almanac that may include a calendar as one of its components, allows the English folded almanac to be distinguished from the folded calendars of Italian and French provenance discussed by Gumbert.¹⁹ London, British Library, Additional 30034 is a good example of the European folded calendar.²⁰ This

exceptionally small manuscript, originally produced in Italy, allows some comparisons to be made with the English folded almanac.²¹ The folded dimensions of Additional 30032 are a mere 65 x 35 mm, smaller than a business card; unfolded, its sheets extend to 125 x 120 mm. The calendar items are much abbreviated when compared with the English folded almanac, consisting of no more than the golden number, Sunday letter, kalends, ides and nones for each month, with Saints' feasts and rules for locating the mobile feasts. Roman numbers are used predominately, except for the two circular diagrams on fol. 4 for calculating the Sunday letter from 1381. This is an example of what North calls the 'primitive lunar almanac' commonly found associated with liturgical calendars.²² The fifteen folded folios are bound together under a small triangular metal plate with a hole through which a cord might be passed. Two other folded calendars, which also retain a metal ring by which they hang from a belt, are illustrated by Gumbert and Nixon from the Louvre and Bodleian Library [Broxbourne] respectively.²³

It is tempting to suppose that the larger and more complex folded almanac was originally based on the model of the folded calendar that generally antedates it.²⁴ That folded calendars were produced in England is evident from Bodleian Library Rawlinson D.838. This manuscript is no longer folded but at one time the twelve folios, which each contain a single month of the calendar, were folded in three. Judging by the historical notes that include English battles and other events from 1265 to the year of the great plague, 1348, the calendar was prepared in about 1350. It does not contain any of the astronomical, medical or astrological items of the later almanac, and the data is presented entirely in roman numerals.

2. *Vade mecum*, *Girdle Book*, *Folded Book*

The classification of the special binding and format of the folded almanac has also given rise to some scholarly confusion. Both Bober and Talbot refer to this type of manuscript as *vade mecum* and this term has crept into most English discussions of the folded almanac.²⁵ They have also been described as girdle books (with or without hyphenation).

Vade mecum (lit. ‘come with me’) is a generic term for any small, portable, notebook or manuscript. The most celebrated examples of the genre are the fine portable books prepared to assist members of the Franciscan and Dominican orders in the discharge of their professional duties and include small-format bibles, service books and aids for preaching and confession.²⁶ They reflect the needs of the mendicant orders to travel lightly and with due respect to their vows of poverty, as well as the high educational standards achieved by the later medieval friars. Medieval medical practitioners shared with the mendicants the need to travel as part of their professional practice and a number of small-format manuscripts have been identified as physicians’ *vade mecum* books.²⁷ While one or two of these happen to include calendrical material, the folded almanac represents a group of manuscripts that is technologically distinct from the *vade mecum* and should not be conflated with it.²⁸ Despite their very small folded dimensions (see Table 1), it might also be noted that the unfolded folios of the folded almanac can not compete for compact presentation of text with either the smallest of the mendicant *vade mecum* books,²⁹ or a number of very compact, but unfolded, calendar manuscripts that reflect the same drive for compression and portability as their folded cousins.

‘Girdle book’ is another misnomer when applied to the folded almanac.³⁰ The girdle book is a codex manuscript from which the binding extends to form a pouch-like sling ending in a special knot, or Turk’s head, by means of which the book might be attached to the girdle or belt. The manufacture of these manuscripts appears to have been restricted to The Netherlands and northern Europe.³¹ Simply because it has been assumed that the folded calendar and almanac were always worn as part of an attachment to the belt is not a sufficient reason to confuse their binding with the continental girdle-book.³²

In English, the best term to describe the class of manuscripts to which the folded almanac belongs is ‘folded book.’ This is a straightforward translation of the German *faltbüchen* and French *livres plicatifs* and accords with European palaeographical convention.³³ As Gumbert has shown in his pioneering survey, these manuscripts were produced in Italy, France, England and Germany throughout the fourteenth and fifteenth centuries.³⁴ Folded almanacs are some of the smallest codices that have survived in any numbers as a class. When folded, surviving examples range in size from 120 to 170 mm long and 30 to 70 mm wide and consist of some five to 19 folios or sheets.³⁵ As already explained, they should be distinguished from the even smaller folded liturgical calendar from which they may well be derived.³⁶ They should also be distinguished from another type of folded calendar for which there does not appear to have a special name, though the printed version is called a xylographic calendar, and which also included astro-medical content, such as the Zodiac Man and Vein Man.³⁷ The largest example of the xylographic calendar I have noticed is London, BL, Egerton 2572. This consists of a single very long strip of parchment, 2140 x 180 mm

in dimensions, divided into 100 mostly-illustrated squares which reduces when folded concertina-style to a neat 120 x 90 mm package.³⁸

It is helpful to consider the folded almanac as part of a family of calendar manuscripts which were produced in the late fourteenth and fifteenth centuries in order to meet the demand for calendrical, astrological and medical information. The audience for calendar manuscripts of all types covered a wide social spectrum from professional users, such as university-trained physicians, at the one end, to common people struggling with literacy and numeracy at the other.³⁹ Lynn White, the historian of technology, has pointed out the intimate association between the computational needs of medical astrology and the development of late medieval astronomical instruments.⁴⁰ The Zodiac Man, for example, also appears on a quadrant still in the possession of Merton College, Oxford.⁴¹ Folded almanacs, with their compact collection of related texts, tables and medical illustrations, reflect the same process. Indeed, the folded almanac can be seen as the ultimate expression of a move toward the miniaturisation of calendars, including those with an astro-medical function, which can be observed among extant calendars dating from the later fourteenth and fifteenth centuries.⁴²

Although a wide variety of textual material was subjected to the folded format, most folded manuscripts are either liturgical calendars or almanacs. In England, the folded format appears to have been used almost exclusively for the almanacs considered here. One exception would appear to be BL Additional 17358. This manuscript contains 17 folded folios, placing it well outside the range of most of the standard versions of the almanac. This is because, unusually, the almanac manuscript has been extended to include a nine-folio version of the biblical history of Petrus

Pictaviensis. Both texts were written in the same hand and on folios of the same dimensions as the almanac but the second manuscript is not so well prepared for the folded format. In some cases the diagrams cross the folds, and no use is made of the backs of the folios to key the content for the user as occurs with the almanac.⁴³ With the exception of the Leiden example, all folded almanacs appear to have been made in England for use in English dioceses which does suggest that this particular type of manuscript was invented there.

Having established what they should be called, the next point to consider is how they were worn.

3. *How were they worn?*

It is reasonable to assume that the compressed format of the folded almanac was adopted to enhance its portability and make it easier to carry it about. Unfortunately most of the surviving folded almanacs have lost their bindings and do not retain clear signs, such as a ring, hole or loop with attached cords of suspension, that would indicate that they were worn in this way. Only one, Ashmole MS 6, has a robust leather cover complete with hole into which a cord may once have been attached. Besides the unique leather-bound Ashmole MS 6, a number of others have limp covers that are likely to have been more typical of the group as a whole.

Judging by those whose soft covers have survived, many folded almanacs once had brightly decorated bindings. Of the ten in the British Library, three have limp covers of vellum that are lined with velvet and silk: Additional 17358, Additional 28725 and Harley 937. The cover of Additional 17358 is lined on the outside with green velvet and on the inside with red silk. The edges are protected with woven braid that is carefully attached with exquisitely tiny stitching. Down the centre of the front

and back covers is another line of braided cord that continues along the tab where it now ends, though at one time this might have extended into a loop for attachment. The cover of Harley 937 is rather similar though the central cord is now no more than an impression on the velvet cover.⁴⁴ There is also evidence of cords attached to the stub of the half cover which remains on the Rosenbach Museum almanac that Gumbert suggests was once part of the carrying loop.⁴⁵ While many of the signs are slight, most almanacs carry the remnants of stitching or the stubs of cord or vellum on the tab end.⁴⁶

Given the exigencies of the English weather, it seems sensible that folded almanacs were sometimes protected by being contained in some kind of case. A demonstration of what could happen when the almanac got wet is provided by the ruined state of Ashmole Rolls 6. Pepys 1662 has tapering slipcase in cuir ciselé lined with vellum which comes complete with a loop of yellow silk by means of which the folded almanac, cover and case might together have hung from the owner's belt.⁴⁷ Welcome 40 has a soft outer shell of vellum similar to that which contains Edinburgh Royal Observatory Cr. 2.20/3 which Ker likens to a 'slip-in spectacle case' to which a 44 mm 'thong' is attached.⁴⁸ The Rosenbach calendar in Philadelphia also has a leather carrying case. Overall, it can be concluded that folded almanacs were designed to be worn hanging from the body. But since this would leave them exposed to loss, theft or damage they were often given the extra protection of a case.

While we cannot be certain how any particular user of the folded almanac chose to wear or carry it, it is easier to imagine how it was manipulated once in the hand. The placement of the titles on the outside of the folded folios indicates that the almanac remained up side down until retrieved, up-ended, and consulted by the wearer. The

sturdy tab which survives on almost all examples allowed the owner to clasp the almanac firmly in one hand while flicking open - and unfolding - the relevant page in the other. Although few of the folded almanacs that have survived are significantly worn along the folds, numerous others were probably read to bits. Lambeth Palace 873 is now in separate pieces that are carefully stored in a neat vellum case. A number of others have pages or sections missing, testifying to an active life.⁴⁹ But an active life doing what? - that is the question which remains to be answered in this section.

4. Did physicians own them?

In his description of the ‘physician’s vade mecum’, Talbot makes the initial assumption that the manuscript he describes was commonly owned by medieval physicians. Indeed, he argues that the pouches hanging from the belts of physicians, which he alleges are frequently seen in medieval illustrations, are, in all probability, designed for holding books of this type. Leaving aside for the time being the question of whether or not the calendar was used by ‘physicians’ as opposed to other medical practitioners such as barber surgeons, Talbot goes on to suggest that folded almanacs were not kept in a pouch, but hung directly from the belt and even that ‘most physicians of the time carried one about’.⁵⁰ Bober also claims that, from the form of the folded almanac, it may be reasonably assumed that they ‘accompanied the doctor on his calls’, whereas the codex form of the medical calendar was intended for ‘home use’.⁵¹

Neither Bober’s nor Talbot’s claims have been contested by the considerable number of scholars who have considered this class of manuscripts in more recent years although the practical objections to the hypothesis have been touched on above. Peter Murray Jones states, in a caption to a figure of Sloane 2250 labelled ‘A

physician's folding calendar', that manuscripts of this type were manufactured in England in the first part of the fifteenth century 'specially for physicians'. Jones seems to be undecided as to how they were worn as he suggests at one point that they were 'fastened by a tassel to the belt' but (on the same page) that 'once folded, they whole thing could be carried in a pouch at the belt.'⁵² Despite the assumption that these calendars were physicians' tools 'owned with pride and not just working tools', as Jones puts it, it might be noted that, apart from the Zodiac Man and the bloodletting canon, Sloane 2250 does not contain other specifically medical content, such as the Vein Man. On the other hand, the other folded almanac illustrated by Jones, Harley MS 5311, does rather more to merit the caption, 'A physician's folding calendar.' Unlike Sloane 2250, Harley 5311 at least has, in addition to standard items such as the calendar, eclipse tables, the Zodiac Man and canon, the Sphere of Apuleius, with a urine chart and canon, as well as a copy of a text I have identified as a slightly abridged version of Grosseteste's *De prognosticatione aeris*.⁵³ On the basis of its two medical illustrations of the Zodiac Man and Vein Man, Kathleen Scott also assumes that NY, Pierpont Morgan Library, Glazier 47 (along with a number of other illustrated manuscripts) was created for the physician which she identifies as a rising class who demonstrated an interest in commissioning specialist books such as the folded almanac.⁵⁴

This may indeed be the case, but a more carefully-worded assessment is provided by Wallis who notes that 'the majority, though not all' folded almanacs were medical in nature without assuming that they must therefore have been owned, worn or commissioned by physicians.⁵⁵ Wallis's caution on this last point is commendable. The difficulty with making any assumptions about ownership on the basis of medical

content, such as the presence in a manuscript of the Zodiac or Vein Man, is that almanacs of all sizes included medical elements and there is no good reason to assume that physicians owned them all.

Despite these necessary cautions, almanacs do appear to inhabit a generally medical orbit, even those that were commissioned or owned and used by laypeople. The calendar of Nicholas of Lynn, which is dedicated to a noble layman, John of Gaunt, has an extensive set of astro-medical canons and diagrams including the Zodiac Man.⁵⁶ Lynn's medical canons were so popular they sometimes circulated independent of the main calendar.⁵⁷ More compact than the *Kalendarium* of Nicholas of Lyn, and probably for this reason adopted in preference to it for the folded almanac, the *Kalendarium* of John Somer was prepared at the instigation of Thomas Kingsbury, Provincial of the English Franciscans and under the patronage of a noble laywoman, Joan, Princess of Kent.⁵⁸ But although physicians did not commission any known versions of the late medieval English almanac, it is reasonable to suggest that they were among its most important users and that their needs fuelled the development of its medical components just as Brévaré suggests in relation to the medieval manuscript versions of the German *Volkskalendar*.⁵⁹ It is usual to find copies of the Somer *Kalendarium* bound up with other cosmological, astronomical, astrological and medical items.⁶⁰ Bober considers that the original scheme for the French *Très Riches Heures* of the Duke of Berry, the most famous of all medieval calendar books, reflected the medical preoccupations that may have occupied the Duke in his declining years.⁶¹

Pictorial evidence does not provide much additional help in determining the way in which the folded almanac was used and worn. Although Talbot claims that there are

illustrations of physicians bearing calendars of this type, this evidence has eluded my searching in the published authorities on medical iconography.⁶² Although there are hundreds of illustrations of saints and clerics wearing the continental girdle book, physicians do not appear to have been depicted in a similar pose.⁶³ Medical practitioners, if they retained any pretensions to professional status, allowed the tools of their trade to be carried by their assistants. The urine vessel, which is the major emblem of the physician, is the usual exception to this rule in medical iconography, but surgeons are also displayed with medical instruments. Physicians are sometimes shown reading or consulting books, but these are borne conventionally on tables or in the hand.⁶⁴ The only English image of a ‘physician’ who may be said to be wearing something at his belt are the depictions of Reynard the Fox in BL, Royal 10 E IV, f.54 and 54v, a character whose sly needs required him to carry his own medicines.⁶⁵

One confusing iconographic discussion of the folded almanac is that provided by John Murdoch in his history of scientific illustration.⁶⁶ Murdoch couples a picture of the familiar prints of the Talbot folded almanac with a woodcut from a fifteenth-century German edition of an astrological work by Johann Lichtenberger on the planetary conjunctions of 1484-1485 and solar eclipse of 1485. The latter illustration depicts a group of five monks, one of whom appears to have both a girdle book and another small object hanging from his belt. Referring not to the girdle book, but to the smaller object on the monk’s belt, Murdoch identifies the latter as ‘a girdle book, most likely an almanac similar to the one in the illustration at the left.’ If this object is a folded manuscript, it may be intended to represent a folded liturgical calendar, such as Wolfenbüttel, HAB, 92 Aug. 4, which was written in Germany in 1487.⁶⁷ But the folded astro-medical almanac seems to have been an English specialty not known in

Germany, though one with French saints, and presumably a French owner, found its way to Leiden by the seventeenth century.⁶⁸ Any association of the folded almanac with the religious orders seems unlikely since, apart from the calendar listing of saints, these manuscripts seem resolutely secular and scientific albeit, to contemporary modes of thought, pseudo-scientific in character.

It can be concluded that the folded almanac was designed to be attached to a belt, though it may not always have been worn in this way. It is also likely that medical practitioners were among those who found them useful and who were inclined to commission and purchase them. But if we are to understand these manuscripts better, it is necessary to examine their contents carefully without ready-made assumptions about who might have used them.

*6. Two 'editions' of the folded almanac*⁶⁹

The core of any medieval calendar was the data that appeared on the monthly calendar pages. Later medieval almanacs, such as those composed for the Oxford meridian by John Somer and Nicholas of Lyn to cover the four Metonic cycles beginning 1387, 1406, 1425 and 1444, extended the regular calendar items by including calculations of the dates and times of lunar conjunctions, lunar and solar eclipses and tables allowing the calculation of the planetary (unequal) hours and other matters. As much or more than the explanatory texts or canons, it is the lunar data that constituted the chief value of the English almanac and fuelled demand for regular updates.⁷⁰

Based on their lunar cycles, there were two major editions of the folded almanac (See Table 2). For the cycles beginning 1387, 1406, 1425 and 1444, the first edition provides a compact version of the *Kalendarium* of John Somer. Somer's authorship is

not immediately evident because most items have been epitomised and moulded to fit the folded format. These manuscripts generally omit the prologue that named Somer himself, the date of original composition in 1380, and Somer's secular and saintly patrons.⁷¹ Somer's authorship has, however, been established by Mooney. Of the 29 folded almanacs, Mooney includes nine among her list of Somer manuscripts.⁷² Four of the larger-format folded almanacs include relatively complete versions of the original Somer *Kalendarium*; the others are what she terms 'composites' though most show a more or less direct descent from Somer's original. This version of the almanac is generally folded three times longitudinally and contains lunar opposition, but not conjunction data.

The situation becomes more interesting when we consider the second edition of the folded almanac that came into production some time before 1462 when all of Somer's original conjunction and eclipse data were superseded. Unlike earlier calendars devised by Oxford-based academics, from the 'first instalment' by Robert Grosseteste or Roger Bacon to Somer's 'third instalment' for the four cycles from 1387-1462, noone appears to have claimed attribution for what was, in effect, a 'fourth instalment' of the calendar for the four 19-year cycles beginning 1463, 1482, 1501 and 1520.⁷³ This instalment went beyond Somer (though not Lynn) to include precise data on oppositions (full moons) as well as conjunctions, although only the latter were really essential for astrological medicine. Initially, the new instalment of the calendar may have circulated simply as a data set.⁷⁴ It was then up to the calendar designers to put the data into a suitable frame with accompanying canons and diagrams and this may have led to a reworking of the Somer calendar text⁷⁵ Even as late as 1508 when the Ballarat almanac was produced the Somer canons and diagrams

were being pressed into service. By this stage the original Somer frame had been considerably changed but the ghost of the original lingered on in the updates. The later edition of the folded almanac is generally folded four rather than three times longitudinally probably because this made it easier to lay out the additional lunar opposition data.

PART 2. THE COMPONENTS OF THE FOLDED ALMANAC

Both the earlier and the later editions of the folded almanac include more or less the same set of sections that are neatly labelled on the back of the six to ten folded sheets which make up a typical specimen.⁷⁶ BL, Harley 5311 will serve to illustrate the earlier version one of the folded almanac; the two almanacs in the Edinburgh Royal Observatory Cr. 2.20/2 and Cr. 2.20/3 will illustrate the second.

Harley 5311 is a particularly handsome folded version of the *Kalendarium* of John Somer and, unlike the manuscript described by Talbot, it appears to be complete.⁷⁷ Harley 5311 was written in about 1406 and includes a number of medical additions to the standard suite of Somer texts and diagrams, notably diagrams of the Vein Man and urine vessels with their accompanying texts. Other folded almanacs that are close to it in size, design and data and also include medical additions including the Urine vessel diagrams are Pepys 1662, Rosenbach Museum 1004/29 and the Talbot manuscript now in private hands. These might properly be considered the medical folded almanac.

The ten folded folios of Harley 5311 are neatly labelled from A to K and bear the following contemporary labels: *A Canones pro festis mobilibus* (fol. 1); *B. Januarius Februarius Marcius* (fol. 2); *C. Aprilis Mayus Junius* (fol. 3); *D. Julius Augustus*

September (fol. 4); *E. October Nouember December* (fol. 5); *F. Tabula lune cum Canone et ymagine Signorum* (fol. 6); *G. Eclipses solis cum canone* (fol. 7); *H. Eclipses lune* (fol. 8); *J. Spera apullei de judiciis urinarum* (fol. 9); *K Tabula ad calculandum pro futuris* (fol. 10). Each folio is divided in two horizontally and three vertically, making six recto and six verso sections, with an upper ‘a’ half and a lower ‘b’ half on each side. The a verso is reserved for the title and has otherwise been left blank in this manuscript. In the following list of contents, letters in square brackets refer to the labels [A-K] on the folded folios:

Fol. 1-1v [A]: Mobile Feast Table; Calendar Canon; Vein Man

- Fol. 1a Canon that explains how to find the elements of the calendar for any day, inc. *Ad noticiam tabularum kalendarij sequencium primo ponitur tabula bipartita*.⁷⁸
- Fol. 1b Untitled two-part table for locating the Sunday letter, golden number, and days of the month of the mobile feasts.⁷⁹
- Fol. 1^v Vein Man (*Homo venarum*) diagram with captions. It is usual to take the first line of the captions as inc. *Vena incisa in fronte purgat emoroydes*.⁸⁰ The first line of the left hand column inc. *Vena in extremitatibus nasi incisa*. In other folded almanacs this diagram appears toward the end of the manuscript, usually after the Zodiac Man (*Homo signorum*).

Fols. 2-5^v [B-E]: The Calendar⁸¹

Each month occupies one half folio, with the text laid out into three text panels which match the folds. The order of the elements differs somewhat from codex versions of the Somer *Kalendarium* and show:

- Left-hand panel and fold: length of half the night in hours and minutes; altitude of the sun at noon in degrees and minutes; year in the [Metonic] cycle from 1 – 19, time of lunar conjunction [prime] in hours and minutes for the first and second cycles beginning 1387 and 1406, and the location of the sun at sunrise in degrees of the relevant zodiacal sign.
- Central panel and fold: liturgical calendar with golden number, Sunday letter, kalends, ides and nones, and the fixed feasts. The saints listed correspond with those found in the common Sarum-use calendars made for southern England.⁸²
- Right hand panel and fold: planetary hours in degrees and minutes, year in the Metonic cycle, time of lunar conjunction in hours and minutes for the second and third cycles beginning 1425 and 1444, length of half the day in hours and minutes, and the days of the month from 1 - 31.

Fol. 6-6^v [F]: Lunar Tables and Canon

These two tables allowed the user to determine which sign of the zodiac the moon was in for any day of any month and which planet ruled over the unequal (or planetary) hours. Versions of the same tables and canon were also provided in the calendar of Nicholas of Lynn and were essential for selecting astrologically propitious times for practices such as bleeding, purging, taking medicine and cauterization.⁸³

- Fol. 6a. Table of the Planetary Hours, headed *Tabula ad sciendum quis planeta regnet in qualibet hora*.⁸⁴
- Fol. 6a. Canon for the Table to find the degree of the moon for every day.⁸⁵
Here with incipit, *Tabula ad sciendum gradum lune omni die* but substantially the same as that transcribed by Talbot.⁸⁶
- Fol. 6b. Two related tables to find the degree of the moon in the signs, headed, *Tabula lune ad sciendum eius signum omni die; Gradus signi pro omni die*.⁸⁷
- Fol. 6^v. Zodiac Man diagram in an arrow-shaped frame, with captions, inc. *[Aries] Caue ab incisione in capite*.⁸⁸
- Fol. 6v A calendar canon (not apparently in Talbot's manuscript) inc. *Annus solaris constat ex 365 diebus et sex horis* appears in the lower half of the folio.

Fol. 7-7^v [G]: Solar Eclipses with Canon

- Fol. 7a: Eclipse canon, inc. *Primo queritur quid sit eclipsis*.⁸⁹ There are also two examples to demonstrate the working of the eclipse diagrams.
- Fol. 7b-8^v Solar eclipse diagrams of in gold and red, 1406-1462.⁹⁰

Fol. 8-9 [H]: Lunar Eclipses

- Fol. 8, 9^v: Lunar eclipse diagrams, in gold and blue, 1398-1462.⁹¹

Fol. 9 [J]: Sphere of Apuleius and Canon; Urine Vessels and Canon

- Fol. 9a: Canon on the left and right hand panels on the nature of those born under different planets, inc. *Natus in sole est amplifacies*;

- The central panel contains the circular diagram known as the Sphere of Apuleius with a canon, inc. *Spera apullei platonis de morte et uita*.⁹²
- Fol. 9b: Diagram of urine vessels with captions, inc. *Rufus color vrine ut aurum purum*.⁹³

Fol. 10 [K]: Tract on Astrological Prediction

- Fol. 10a The final item contains a slightly shortened version of Robert Grosseteste's account of astrological weather prediction, inc. *Ad pronosticandum aeris diuersam dispositionem futuram* but without attribution.⁹⁴ On fol.10^v there is a circular diagram of the planetary aspects in the signs.

Both Harley 5311 and the folded almanac described by Talbot present versions of the *Kalendarium* of John Somer, although with some additions. Talbot's manuscript includes a tract on bloodletting that does not occur in any other folded almanac, and the Grosseteste only occurs in Harley 5311.

The two folded almanacs in the collection of the Royal Observatory in Edinburgh provide neat copies of the new ('fourth') instalment of the *Kalendarium* for the cycles beginning 1463, 1482, 1501 and 520 at the meridian of Oxford.⁹⁵ These manuscripts are only half the size of either Harley 5311 or the almanac described by Talbot and they do not have any additional medical, astrological or prognosticatory items besides the Zodiac and Vein Man diagrams. The eclipses are also restricted in number. The Edinburgh folded almanacs are so similar that it would appear likely that they were produced by professional scribes at the same workshop some time around 1463 when the indiction table and the cycles of conjunctions and oppositions begin, although Cr.

2.20/2 may have been written some years before Cr. 2/20/3 since it includes some earlier eclipse data.

The calendar pages of almanacs of this type are folded in half horizontally, and then in four longitudinally making eight sections. Although the Edinburgh almanacs are smaller than Harley 5311, the calendar pages actually contain more solar and lunar data. As with the earlier version, each month occupies one half folio, with the text laid out in four panels (1 - 4) which match the folds. The earliest rendition of this version of the almanac would appear to be BL Sloane 807 written in around 1444 and thus overlapping with the final cycle of the original Somer *Kalendarium*, but laying the data out in the new format as follows:

- The first panel and fold contains solar data: number of the days, beginning of dawn and end of twilight in hours and minutes, place of the sun at dawn in degrees of the relevant sign, altitude of sun at noon in degrees, planetary hours in degrees and minutes, half night hours, half day hours.
- The second panel and fold contain the items of the liturgical calendar with golden number, Sunday letter, kalends, ides and nones, and the fixed feasts. The saints listed correspond with those found in the common Sarum-use calendars made for southern England.⁹⁶
- The third and fourth panels show lunar data. For four cycles beginning 1463, 1482, 1501 and 1520, there are six columns to show the Metonic year, hour and minute for both oppositions and conjunctions.

A highly compressed version of the Somer lunar tables follow, with the table of the planetary hours and the canon, inc. *Pro noticia istius tabula lune*. The final item is

a finely illustrated set of lunar and solar eclipse diagrams, though these have been completed only as far as the completion of the second cycle, namely 1500. Cr. 2.20/3 was intended to contain the Vein Man and Zodiac Man, but the scheme of illustration was not completed.

The Middle English translation, Harley 937, appears to be based on the three-fold type of calendar, although data is provided for only three cycles, and in other ways it is a considerably simpler text than the Latin versions, despite being handsomely produced. Ashmole MS 6, which represents a third calendar type, is somewhat distinctive in the ordering of its calendar, and in this and other ways reflects the individuality of its original compiler. It is the first and earlier group of almanacs that seems to have the clearest links with medical practice.

CONCLUSION

What is the folded almanac? This article has provided an answer to this question by reviewing critically the terminology, form and function of a class of manuscript that has long been assumed to be employed in the practice of astrological medicine. It has been demonstrated that the folded almanac was probably an English technological innovation that arose as a development of the folded liturgical calendar. On the evidence of signs on the surviving manuscripts, it can be confirmed that the almanac was designed to be worn suspended from the belt, though it was probably common to protect it in some kind of case. Medical practitioners are likely to have owned and used at least some of the surviving examples of this class of manuscript, but it is important not to over-state the evidence for associating the folded almanac with medical practice. Most examples contain data and texts that differ in no way from

non-folded and non-medical versions of the *Kalendarium* of John Somer to which most are related. There were two major editions of the folded almanac that suggests that they filled a need that extended from 1387 until 1538 when they were finally supplanted by printed almanacs. This currency spans the period during which astrology increased in significance as a component of medieval medical practice, something that the folded almanac may have played a role in facilitating.

Having achieved a better understanding of the form and function of the folded almanac, a second article will consider the wider social and intellectual context of these manuscripts and what they reveal about the place of astrology in the practice of late medieval English medicine.

FIGURES

Figure 1. British Library, MS Sloane 2250, fol. 6. Zodiac Man.

Figure 2. Chicago, Newberry Library, MS Case 127.

Figure 3. Chicago, Newberry Library, MS Case 127, fol. 6 v Calendar page for May.

TABLES

ENDNOTES

¹ I wish to acknowledge the generous assistance of Prof. J. P. Gumbert.

² P. Kibre, ‘ “Astronomia” or “Astrologia” Ypocratis’, reprinted in *Studies in Medieval Science* (London, 1984), XIV, 133-56. Citing the introduction in MS Paris, Bib.Nat. 7432: ‘Cuiusmodi medicus est qui astronomiam ignorat. Nemo quidem in manu illius se committere debet quia imperfectus est et ideo cecus non inmerito talis medicus reputatur.’ (Ibid. XIV, 143).

³ C. A. Mercier, *Astrology in Medicine* (London, 1914).

⁴ See, in order of their usefulness on the topic of medical astrology: C. Rawcliffe, *Medicine & Society in Later Medieval England* (Far Thrupp, Stroud, Gloucestershire, 1995); N. Siraisi, *Medieval and Renaissance Medicine* (Chicago, 1992); F. Getz, *Medicine in the English Middle Ages* (Princeton, N.J., 1998); C. Talbot, *Medicine in Medieval England* (London, 1967); S. Rubin, *Medieval English Medicine* (New York, 1974); E. Kealey, *Medieval Medicus* (Baltimore and London, 1981).

⁵ The material is comprehensively reviewed by G. R. Keiser, *A Manual of Writings in Middle English, 1050-1500*, vol. 10 Works of science and information (New Haven, CT, 1998); See also I. Taavitsainen, *Middle English Lunaries. A Study of the Genre*, Mémoires de la Société Néophilologique de Helsinki 47 (Helsinki, 1988); Taavitsainen provides an edition and introduction to the zodiacal lunary in the Guild-Book of the Barber-Surgeons of York [BL Egerton 2572], ‘A Zodiacal Lunary for Medical Professionals’, in *Popular and Practical Science of Medieval England*, ed. L. M. Matheson (East Lansing, 1994), 283-300; L. Means (ed.), *Medieval Lunar Astrology: A Collection of Representative Middle English Texts* (Lewiston, 1978); On English calendars, almanacs and computational texts see R. H. Robbins, ‘English Almanacks of the Fifteenth Century’, *Philological Quarterly*, 18 (1939), 321-31.

⁶ In English: Means (ed.) *Medieval Lunar Astrology*; L.R. Mooney, ‘A Middle English verse Compendium of Astrological Medicine’, *Medical History*, 28 (1984), 406-19; In German: W. D. Müller-Jahncke, ‘Astrologische-magische Theorie und Praxis in der

Heilkunde der frühen Neuzeit’, *Sudhoffs Archiv*, Beih. 25 (1985), 1-328; Christoph Weisser, *Studium zum mittelalterlichen Krankheitslunar ein Beitrag zur Geschichte laienastrologischer Fachprosa*, Würzburger Medizinhistorische Forschungen, vol. 21 (H. Wellm, Pattensen/Han, 1982); Idem, ‘Das Krankheitslunar aus medizinhistorischer Sicht: Ein Beitrag zur iatromathematisch-astrologischen Fachliteratur des Mittelalters’, *Sudhoffs Archiv*, 65 (1981), 390-400; L. Welker, *Das ‘Iatromathematische Corpus’. Untersuchungen zu einem allemannischen astrologisch-medizinischen Kompendium des Spätmittelalters mit Textausgabe und einem Anhang*, Zürcher Medizingeschichtliche Abhandlungen 196 (Zürich, 1988); In Latin from Italy: Nicholaus de Paganica. *Compendium Medicinalis Astrologiae*, ed. G. dell’Anna (Galatina, 1990). A modern edition of William of Marseilles (‘The Englishman’) *De urina non visa*, would be a useful addition to this field.

⁷ For the zodiac man see H. Bober, ‘The Zodiacal Miniature of the Très Riches Heures of the Duke of Berry – Its Sources and Meaning’, *Journal of the Warburg and Courtauld Institutes* 11 (1948), 1- 34.

⁸ H. Strandberg, ‘The Popular Bloodletting Man, a Survival of a Medieval Tradition’, *Histoire des sciences médicales* 17 (1982), 53-6.

⁹ C.H. Talbot, ‘A Mediaeval Physician’s Vade Mecum’, *Journal of the History of Medicine*, 16 (1961), 213-33, at p. 213.

¹⁰ Voigts, ‘Scientific and Medical Books’, 392. Voigts notes that the Talbot manuscript has been owned most recently by A. A. Houghton, Jr.

¹¹ Bibliography relating to individual manuscripts is detailed in Table 1. In addition to the palaeographic analysis of J. P. Gumbert, ‘Über Faltbücher, vornehmlich Almanache’, in *Rationalisierung der Buchherstellung im Mittelalter und Frühneuzeit*, P. Rück and M. Boghardt (eds.), (Marburg an der Lahn, 1994), the fullest account of the group is that by L. E. Voigts, ‘Scientific and Medical Books’, 356-357 and fig. 37; 392, fnn. 40-41 in J. Griffiths and D. Pearsall (eds), *Book Production and Publishing in Britain 1375-1475* (Cambridge, 1989). F. Wallis, ‘Medicine in Medieval Calendar Manuscripts’, in *Manuscript Sources of Medieval Medicine. A Book of Essays*, ed. M. R. Schleissner (New York, 1995), 105-43 provides a list of ten examples of the almanac, all in British collections (139, fn. 41). For other discussions of the group,

usually based on a few of the examples in the British Library, see P. M. Jones, *Medieval Medicine in Illuminated Manuscripts*, rev. ed. (London, 1998), pp. 53-54; and, more briefly, in P. M. Jones, 'Information and Science' in R. Horrox (ed.) *Fifteenth Century Attitudes: Perceptions of Society in Later Medieval England* (Cambridge, 1994), 107-8; J. E. Murdoch, *Album of Science: Antiquity and the Middle Ages* (New York, 1984), pp. 96-97, 306, 316, 318-19 with plates drawn mainly from the Talbot manuscript.

¹² Voigts, 'Scientific and Medical Books', p. 392, footnotes 40 and 41. Similarly, Voigt's caption to an illustration from fol. 6 from Ashmole MS 6 covers all possibilities: 'Latin folding almanac, *vade mecum*, or girdle-book.'

¹³ On calendars generally see C. Wordsworth, *The Ancient Kalendar of the University of Oxford* (Oxford, 1904).

¹⁴ See A. Borst, *Die karolingische Kalendarreform*, MGH Schriften 46 (Hannover, 1998), pp. 433-38.

¹⁵ G. A. Glaister, *Encyclopedia of the Book*, 2nd ed. (London, 1996), pp. 6-7. According to *Oxford English Dictionary Online* (Oxford 2003), Roger Bacon (1267) provides the earliest notice of *almanach* in Latin but there is no convincing derivation of *manākh* from Semitic sources. Other references cite modern Arabic '*al manākh*, meaning 'the climate'.

¹⁶ L. R. Mooney, 'English Almanacks from Script to Print', in *Texts and Their Context*, ed. J. Scattergood and J. Boffey (Dublin, 1997), pp. 11-25.

¹⁷ *Kalendarium*, ed. Eisner, p. 7.

¹⁸ N. R. Ker, *Medieval Manuscripts in British Libraries* Vol. II Abbotsford –Keele (Oxford, 1977), pp. 554-55 in relation to Edinburgh, Royal Observatory Cr. 2. 20/1 and Cr. 2.20/2.

¹⁹ Gumbert, 'Faltbücher'.

²⁰ A. G. Watson, *Catalogue of Dated and Datable Manuscripts, c. 700-1600 in the British Library*, vol. 1, no. 335 (1381); vol. 2, fig. 269 (Add. 30034, fol. 15).

²¹ Watson, *Datable Manuscripts in the British Library*, n. 335.

²² North, *Chaucer's Universe*, 87.

²³ Paris, Louvre, Objets d'Art, MRR 185: See Gumbert, 'Faltbücher', pp. 115-16, plates B and C; Oxford, Bodleian Library, Broxbourne 89.15. H. M. Nixon, *Broxbourne Library. Styles and Designs of Bookbindings from the Twelfth to the Twentieth Century* (London, 1956), no. 3.

²⁴ See the suggestion of Talbot, 'Vade Mecum', p. 214: 'It may be that medical men adopted this custom (of the folded calendar) from the religious orders.'

²⁵ Even so recently as *Western Medicine: An Illustrated History*, ed. I. Loudon (Oxford, 1997), p. 6.

²⁶ D. L. d'Avray, 'Portable Vademecum books containing Franciscan and Dominican texts', in *Manuscripts at Oxford: An Exhibition in Memory of Richard William Hunt (1908-1979)*, ed. A. C. de la Mare and B. C. Barker-Benfield (Oxford, 1988)

²⁷ Though some seem rather large for this purpose. Means, *Lunar Astrology*, pp. 12, 20-21, identifies the following manuscripts as a physician's *vade mecum*: C1 Cambridge, Gonville and Caius College, 336/725 'Medical, astronomical and astrological material with calendar' [250 x 180 mm]; C2 Cambridge, Gonville and Caius College, 457/395 'Medical recipes with medical and astrological treatises [250 x 180 mm]; S4 London, BL, Sloane 965 Astronomical, astrological and medical material with calendar [85 x 60 mm]. Dimensions and sigils from Means.

²⁸ Talbot, 'Vade Mecum', p. 216.

²⁹ D'Avray item XIV.7, p. 64, notes a Franciscan psalter, missal and breviary combined which, when closed, measures 147 x 105 x 50 mm.

³⁰ Pace A. Watson, *Catalogue of Dated and Datable Manuscripts c. 435-1600 in Oxford Libraries*, vol. 1 (Oxford, 1984), p. 6 where he refers to Ashmole Rolls 6 as 'folded to form a girdle book.'

³¹ One possible exception is Yale, Beinecke Library MS 84, though it is likely that this English manuscript of Boethius was bound outside its place of origin. See E.T. Silk, 'The Yale 'Girdle-Book' of Boethius', *Yale Library Gazette* 17 (1942), 1-5; B. A. Shailor, *Catalogue of medieval and Renaissance manuscripts in the Beinecke Rare Book and Manuscript Library*, Yale University (Binghamton, N.Y., 1984-1992).

³² For the European girdle book see J. A. Szirmai, *The Archaeology of Medieval Bookbinding* (Aldershot, Hants, 1999), 236-81.

³³ From D. Muzerelle, *Vocabulaire codicologique répertoire méthodique des termes français relatifs aux manuscrits* (Paris, 1985) 143.13.

³⁴ Gumbert, 'Über Faltbücher', pp. 111-132.

³⁵ See Table 1 for a complete list of manuscripts, dimensions and other details.

³⁶ To the examples listed by Gumbert, which I list here for information, might be added another in the Pierpont Morgan Library: Boston, Museum of Fine Arts 46.458; Cambridge, Mass. Houghton Lib, Typ 278H; Leipzig, UB, Repl. II 170; London, BL Add. 30034; New York, Pierpont Morgan Library M.897; Oxford, Bod. Lib., Broxbourne 89.15; Paris, BN, m.a. 1.375; Paris, Louvre, Objets d'Art, MRR 185; Philadelphia, Rosenbach Foundation 1003/29; Wofenbüttel, HAB 92 Aug. 4°.

³⁷ London, BL: Additional 17367; Additional 70517; Egerton 2724; Harley 2332; Sloane 966; New York, Pierpont Morgan Library M.941; Oxford, Bod. Lib.: Ashmole 8; Douce 71; Rawlinson D. 239; Rawlinson D.439; Rawlinson D. 939. I thank Roger Wieck for drawing my attention to Pierpont Morgan Library M. 941, which now consists of three pieces but was formerly a roll, 132 x 1561 mm. For description of this manuscript, see *Sixteenth Report to the Fellows of the Pierpont Morgan Library, 1969-1971*, ed. C. Ryskamp (New York, 1973), p. 22; For the printed 'xylographic calendar', see E. F. Bosanquet, *English Printed Almanacs and Prognostications* (London, 1917), pp. 3, 315, pl. II. For the zodiac man in London, BL Add. 17367 see Jones, *Medieval Medicine*, pp. 67-9 and figs. 27, 28; Bober, 'Zodiacal Miniatures', plate 11. For illustration of Douce 71, see A. G. Watson, *Catalogue of Dated and Datable Manuscripts in Oxford Libraries*, vol. 2 (Oxford, 1984), fig. 349.

³⁸ Concertina folded books are common in Oriental book bindings which suggests a possible origin for these almanacs. See J. Greenfield, *ABC of Bookbinding* (Newcastle DE, 1998), p. 29;

³⁹ However, it does not seem likely that even the xylographic calendar can indicate the worldview of 'peasants' as suggested by J. Alexander and P. Binski, eds. *Age of Chivalry, Art in Plantagenet England (1200-1400, Royal Academy exhibition catalogue (1987), No.*

222 concerning Oxford, Bod. Lib., MS Rawinson D. 939. Also illustrated in Otto Pächt and J. J. G. Alexander, *Illuminated Manuscripts in the Bodleian Library* Oxford, vol. 3 (Oxford, 1973), no. 749. For the xylographic almanac as a reflection of rural English life, see J. B. Friedmann, 'Harry the Haywarde and Talbat his Dog: An Illustrated Girdle Book from Worcestershire', *Art into Life: Collected Papers from the Kresge Art Museum Medieval Symposia*, ed. G. Fisher and K. L. Scott (East Lansing, MI 1995), 115-53; J. W.Y. Higgs, *English Rural Life in the Middle Ages* (Oxford, 1965), plates 7b, 12a, 13a, 15a, 17b and 22d.

⁴⁰ L. White, 'Medical Astrologers and late medieval technology', *Viator*, 6 (1975), 295-308

⁴¹ See Bober, Plate 7a.

⁴² Compact calendars were also produced in regular (i.e. non-folded) format or as 'pamphlets' of five or six folios that can sometimes be found bound up in other manuscripts. See, for example, Oxford, Bod. Lib., Ashmole MS. 5, a 14th century copy of the Calendar of Nicholas of Lynn, which is only 140 x 110 mm (about half an A4 page), or London, BL, Harley 3812 that consists of five folios of calendrical information written very roughly on crude parchment but including a vein man, a zodiac man and a series of canons. In contrast, the full-size version of the calendar of Nicholas of Lynn edited by Eisner (pp. 34-47) takes up about 40 folios in fifteen manuscripts which range between 140 - 238 x 96 - 242 millimetres in size.

⁴³ For an illustration that shows the text of the first manuscript in Add. 17358 see M. Brown, *Understanding Illuminated Manuscripts: a Guide to Technical Terms* (London, 1994), p. 124. Another exception is Oxford, Bod. Laud Misc. 750 a folded manuscript written around 1270 which includes arithmetical tracts, a genealogy of the patriarchs from Adam to Noah and documents relating to the monastery of Glastonbury. See H. O. Coxe, *Bodleian Library Quarto Catalogues*, vol. 2 Laudian Manuscripts, 2nd ed. by R. W. Hunt (Oxford, 1973), p. 529.

⁴⁴ This cover appears similar to that of Wolfenbüttel, HAB, 92 Aug. 4°, illustrated by Gumbert, 'Faltbücher', p. 111 [Abb. A].

⁴⁵ Unpublished description by J. P. Gumbert, dated Nov. 1996.

⁴⁶ For example: BL Add 28725 (flattened stub of thread); Cotton Charter VIII.26 (remnant of sturdy blue cord); Harley 937 (hole in tab); Harley 5311 (remnant of knot of green cord); Stowe 1065 (parchment tie on tab); Oxford, Bod. Lib. Rawl. D928 (R) (length of vellum tags attached to tab)

⁴⁷ *Catalogue of the Pepys Library at Magdalene College Cambridge*, vol. 5 Manuscripts. Part I: Medieval, comp. by R. McKitterick and R. Beadle (Woodbridge, Suffolk, 1992), pp. 28-29; Somer *Kalendarium*, ed. Mooney, pp. 55-56.

⁴⁸ N.R. Ker, *Medieval Manuscripts in British Libraries*. Vol. 2, (Oxford, 1977), p. 556.

⁴⁹ Wellcome 39 appears to be a single folio from an almanac that was probably originally much the same as Wellcome 40. Talbot's manuscript had a sheet missing from the calendar section and the Ballarat almanac is also incomplete, missing the calendar canon and, possibly, the lunar tables. The Rosenbach almanac lacks the folios which usually contain the lunar tables and the zodiac man.

⁵⁰ Talbot, 'Vade Mecum', p. 214.

⁵¹ Bober, 'Zodiacal Miniature', 24.

⁵² Jones, *Medieval Medicine in Illuminated Manuscripts*, fig. 45.

⁵³ See below, f.n. 114.

⁵⁴ K. L. Scott, *Later Gothic Manuscripts 1390-1490, A Survey of Manuscripts Illuminated in the British Isles*, gen. ed. J. J. G. Alexander (London, 1996), pp. 51, 75 n. 62. The catalogue description of Glazier 7 is headed 'Doctor's Folded Almanac' based, it can be assumed, on the presence of the two medical diagrams, see *Twenty-first Report to the Fellows of the Pierpont Morgan Library, 1984-1986*, ed. C. Ryskamp (New York, 1989), p. 85.

⁵⁵ Wallis, 'Medicine in Medieval Calendar Manuscripts', p. 139, n. 41.

⁵⁶ See Lynn *Kalendarium*, ed. Eisner, 201: 'In pede huius tabule habetur de partibus corporis hominis quod signum quam partem recipit.'

⁵⁷ On the independent popularity of the medical canons of the calendar of Nicholas of Lynn, see Lynn *Kalendarium*, ed. Eisner, pp. 28-29.

⁵⁸ Somer *Kalendarium*, ed. Mooney, p. 34.

⁵⁹ F. B. Brévar, ‘The German Volkskalendar of the Fifteenth Century’, *Speculum* 63 (1988): 312-42 at p.336.

⁶⁰ L. R. Mooney, ‘English Almanacks from Script to Print’, p. 15.

⁶¹ Bober, *Très Riches Heures*, 33.

⁶² I have checked depictions of practitioners reproduced in the following: Jones, *Medieval Medicine in Illuminated Manuscripts*; L. C. McKinney, *Medical Illustrations in Medieval Manuscripts* Publications of the Wellcome Historical Medical Library, n.s. 5 (London, 1965); Siraisi, *Medieval and Early Renaissance Medicine*; C. Rawcliffe, *Medicine and Society in Later Medieval England* (Stroud, 1995); M.-J. Imbault-Huart, *La Médecine au Moyen Age à travers les manuscrits de la Bibliothèque Nationale* (Paris, 1983).

⁶³ Nixon, *Broxbourne Library*, p. 9 notes that there are good English examples of saints wearing girdle-books in Henry VII’s Chapel in Westminster Abbey. Szirmai, *Archaeology of Bookbinding*, 236- 81, citing Bruckner, states that there are now over 800 known illustrations of the girdle book.

⁶⁴ For examples, as illustrated by Siraisi, *Medieval and Early Renaissance Medicine* figs. 8,9, 29.

⁶⁵ Available Jones, *Medieval Medicine in Illuminated Manuscripts*, 49, figs. 39-40.

⁶⁶ J. E. Murdoch, *Album of Science: Antiquity and the Middle Ages* (New York, 1984), p. 97, fig. 93.

⁶⁷ Gumbert, ‘Über Faltbücher’, plate A.

⁶⁸ Leiden, UB, Vulc. 100 C.

⁶⁹ See Table 2 for summary of the Metonic cycle data for all folded almanacs, including the four cycles prepared by John Somer (1387, 1406, 1425, 1444), and the ‘fourth instalment’ (1463, 1482, 1501, 1520).

⁷⁰ The four cycles include 912 new moons and 912 full moons and over 100 eclipses. For an outline of the steps required to calculate a simple eclipse on the basis of the Alphonsine Tables, see Edward Grant, *A Source Book in Medieval Science* (Cambridge, Mass.,

1974), pp. 475-78. On Oxford calendrists see North, *Chaucer's Universe*, p. 93; Lynne *Kalendarium*, ed. Eisner, pp. 5-9; Somer *Kalendarium*, ed. Mooney, pp. 32-33.

⁷¹ The calendar canon in Rawl. D.928 includes the reference to Somer but omits the date of composition (originally 1387), appropriate for an update that continues Somer's conjunction data for three additional cycles, labelled 5, 6 and 7 in the manuscript.

⁷² Somer *Kalendarium*, ed. Mooney, pp. 48 - 50, lists 34 complete copies of which eight are folded versions, as well as nine partial or fragmentary versions of which two are folded.

⁷³ Somer *Kalendarium*, ed. Mooney, p.97. In the prologue, Somer refers to the material 'in hoc opusculo tercio kalendarii' assuming knowledge of the two earlier sets of data compiled for the Oxford meridian.

⁷⁴ Another curious hybrid is Sloane 2250. This has the Somer conjunctions and eclipses for cycles beginning 1387, 1406 and then leaps over 50 years to the new conjunction data for the 1482 and 1501 cycles. Presumably created in around 1482, the compiler appears to have filled the other columns with redundant data for the sake of completeness.

⁷⁵ Mooney, 'English Almanacks', p.17, n. 28 lists 14 Somer calendars with updated cycles and three Lyn calendars.

⁷⁶ The Leiden almanac differs in having one folio per calendar month extending the number of folios to 19. I thank Prof. Gumbert for this information.

⁷⁷ Mooney designates this manuscript as H4.

⁷⁸ Somer *Kalendarium*, ed. Mooney, pp. 205-07. This section is not present in Talbot's manuscript and may have been lost. Mooney, p. 205, notes that this version of the canon appears in ten Somer manuscripts including the following folded almanacs: Additional 17358, Harley 5311, Sloane 2250 and Ashmole Rolls 6.

⁷⁹ Somer *Kalendarium*, ed. Mooney, pp.114-15. Not the same layout, but the same information as Lynn *Kalendarium*, ed. Eisner, pp.178-89.

⁸⁰ Not edited by Mooney nor transcribed by Talbot, but occurs in the Talbot manuscript as indicated in the reproduction in fig. 2.

⁸¹ Somer *Kalendarium*, ed. Mooney, pp. 116-39. Mooney incorrectly labels the year of the Metonic cycle (1 - 19) as if it were the day column for the conjunction data that are in fact given in hours and minutes. The days run from 1 - 31 and are given further to the left or right.

⁸² As indicated in C. R. Cheney, ed., *Handbook of Dates for Students of English History*, RHS Guides and Handbooks 4 (London, 1945; rpt. with corr. 1981); F. Wormald, ed. *English Benedictine Kalendars After A.D. 1100* (London, 1946).

⁸³ *Lynn Kalendarium*, ed. Eisner, pp. 198-201.

⁸⁴ Somer *Kalendarium*, ed. Mooney, p. 145; *Lynn Kalendarium*, ed. Eisner, pp. 176-77.

⁸⁵ Somer *Kalendarium*, ed. Mooney, pp. 140-43.

⁸⁶ Talbot, 'Vade Mecum', pp. 221-22. Talbot notes that this canon is found in Sloane 2250, Sloane 807 and Harley 5311. Curiously, he does not mention that these are all folded almanacs.

⁸⁷ Somer *Kalendarium*, ed. Mooney, pp. 146-47. Only the first table corresponds to *Lynn Kalendarium*, ed. Eisner, pp. 182-83.

⁸⁸ Somer *Kalendarium*, ed. Mooney, p. 149; Talbot, 'Vade Mecum', p. 222

⁸⁹ Somer *Kalendarium*, ed. Mooney, pp. 208-10. The version of the eclipse canon edited by Talbot, 'Vade Mecum', p. 219, inc. *Secuntur figure eclipsisum*, appears to be rather scrambled. The version in Harley 5311 has the first and last paragraphs reversed. The first paragraph should probably begin with this succinct definition of an eclipse: 'Primo queritur quid sit eclipsis. Eclipsis solis est cum inter nos et ipsum solem luna obicitur quod numquam fit nisi in novilunio. Eclipsis vero lune est cum inter solem et ipsam lunam umbra terre ibicitur quod numquam fit nisi in plenilunio. Nam in isto canone hoc ordine ulterius procedendum est. Primo supra quamlibet figuram ponitur tempus principii eclipsis quod erit eodem die uel ante mediam noctem proximo sequentem tot horis et minutis post meridiem si hore cum minutis ibi posite pauciores fuerint duodecim'. [The rest continues as in Talbot. Talbot's final line is the verse, *Puncta cadente more duacio tempus et hora*. Harley 5311 then continues with an additional paragraph, bits of which seem to appear as Talbot's first para.] 'Sequitur eclipsis ubi supra quamlibet figuram ponitur annus Christi mensis dies hora minutum et secundum incoacionis eclipsis in tempore. Prima pars dicit

quantum eclipsabitur de diametro corporis. Secunda narrat tempus casus. Tercia dicit dicit dimidium more et quarta di.... Eclipsis in tempore'.. [Here follow three circular diagrams]

⁹⁰ Somer *Kalendarium*, ed. Mooney, pp.152-55.

⁹¹ Somer *Kalendarium*, ed. Mooney, pp.155-61.

⁹² Discussed by L. White, *A History of Magic and Experimental Science* vol. 1 (New York, 1923), p. 684 in connection with the notebook of John Crophill and with a listing of manuscripts in Appendix I, 692-96 which includes Harley 5311.

⁹³ This is also not edited by Talbot, but present on the reproduction of the Ring of Urines, fig. 4.

⁹⁴ Die impressionibus aeris seu de prognosticatione, in L. Maur, ed. *Die Philosophiscen Werke des Robert Grosseteste, Bischofs von Lincoln* (Münster, 1912), pp. 42 – 45; 48-49. A circular diagram of the planetary aspects in the signs replaces one section of text.

⁹⁵ N. R. Ker, *Medieval Manuscripts in British Libraries II Abbotsford –Keele* (Oxford, 1977), p. 554; Catalogue of the Crawford Library of the Royal Observatory Edinburgh (Edinburgh, 1890), 488-89.

⁹⁶ As indicated in C. R. Cheney, ed., *Handbook of Dates for Students of English History*, RHS Guides and Handbooks 4 (London, 1945; rpt. with corr. 1981); F. Wormald, ed. *English Benedictine Kalendars After A.D. 1100* (London, 1946).