# Editions and Commentaries

## Teaching the Science of the Stars in Prague University in the Early Fifteenth Century: Master Johannes Borotin[i]

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We have records of the teaching of astronomy – the seventh and final subject of the seven liberal arts – from the late twelfth century onwards, and a group of texts has been identified, on the grounds of their frequent occurrence together in manuscripts, as forming the curriculum of the art.[ii] In 1405, in the statutes of the University of Bologna, this curriculum is set out in detail:

i I am very grateful to the help of Pavel Blažek and Ota Pavlíček, and the kind services of Martina Hůlková in the Prague Castle Archive. Oleg Voskoboynikov has helped me in deciphering the Latin text and identifying some of the sources. I am also grateful to Petr Hadrava, Alena Hadravová for their kindness and advice, and to Nicolas Weill-Parot for helping to identify magical references.

ii Olaf Pedersen, 'The Corpus Astronomicum and the Traditions of Mediaeval Latin Astronomy', *Colloquia Copernicana* III, Wroclaw 1975, pp. 57–96.

During the first year of the astronomy course the *Algorismi* (of Sacrobosco) is read, followed in order by the first book of Euclid's *Geometry*, with the commentary of Campanus, the *Alphonsine Tables* with their canons (Rules), and the *Theorica Planetarum*. During the second year the *Sphere* (of Sacrobosco) is read followed in order by the canons for the astronomical tables of John of Lineriis, and the *Treatise on the Astrolabe* of Messehallah. During the third year Alcabitius is read, followed in order by the *Centiloquium* of Ptolemy with the commentary by Haly, the third book of (Euclid's) *Geometry* and the *Tractatus Quadrantis*.[i] During the fourth year the whole *Quadripartitus* is read followed by the *De urina non visa*[ii] (of William the Englishman) and the third book of the *Almagest*.[iii]

Only eight years later we find evidence of a very similar curriculum in a series of notes and commentaries in a manuscript which

i I.e., the *Treatise on the Quadrant* of John of London.

ii The text by William the Englishman, edited in Laurence Moulinier-Brogi, *Guillaume l'Anglais: le frondeur de l'uroscopie médiévale (XIIIe s.), Edition commentée et traduction de* De urina non visa, Geneva 2011.

iii 'In astrologia in primo anno primo legantur Algorismi de minutis et integris; quibus lectis, legatur primus geometrie Euclidis cum commento Campani; quo lecto, legantur Tabule Alfonsi cum canonibus; quibus lectis, legatur Theorica planetarum. In secundo anno, primo legitur Tractatus de sphera; quo lecto legetur secundus geometrie Euclidis; quo lecto leguntur Canones super tabulis de Lineriis; quibus lectis, legatur Tractatus astrolabii Messachale. In tertio anno, primo legatur Alkabicius; quo lecto, legatur Centiloquium Ptolomei cum commento Haly; quo lecto, legatur tertius geometrie; quo lecto, legatur Tractatus quadrantis. In quarto anno, primo legatur Quadripartitus totus; quo lecto, liber legatur De urina non visa; quo lecto, legatur dictio tertia Almagesti': Jean-Patrice Boudet, *Entre science et necromance*, Paris 2006, p. 289.

once belonged to the University of Prague, and is now kept in the Prague Castle Archive as MS Prague, Metropolitan Chapter Library, O.1.[i]

This manuscript includes almost entirely notes of the courses followed or taught by a student at the university in the fields of astronomy and astrology. It is full of scraps of texts and large empty spaces, some of them extending over several pages. The length of time over which items were added to the notebook is sufficient to explain the changes of appearance of the script. It is reasonable to suppose that the notebook was written entirely by one man, who names himself as the writer on fol. 129r:

> Eodem die Magister Ioannes Andree doctor medicine incepit legere librum magnum Ptolomei Almagesti in Praga. Mitte, mi domine, auxilium de sancto et de Syon, tuere me ut perficere possim quod proposui, quia volo. Me Borotyn scripsit in Zderaz dum [s]ibi vixit anno milleno quadringento (sic!) duodeno, quo iam complebat quatuor triginta Decembres ('On the same day [20 November, 1412], Master Ioannes Andree, a doctor of medicine, began to lecture on the great book of Ptolemy's *Almagest* in Prague: "Send me help, O Lord, from your sanctuary and from Zion; protect me so that I can complete what I have planned, since this is my wish". Borotin wrote me (this manuscript) in Zderaz, while he was living there in 1412, when he was completing his 34th December').

i Described in A. Podlaha in *Soupis rukopisů knihovny metropolitní kapitoly pražské*, Prague, eds. A. Patera and A. Podlaha, 2 vols, Prague 1910–1922, II, 1922, pp. 452–3. Its connection with the University of Prague is confirmed by a note on fol. 223v: 'ad honorem universitatis Pragensis' ('for the honour of the University of Prague').

The same name 'Borotyn/Borotin' appears several times in the manuscript:

1) Fol. 114r: Continuatio expositionum canonum tabularum M. Io. de Borotin ('Continuation of the explanation of the Canons (rules) for the tables of (by) Master Io. de Borotin').

2) Fol. 222v: 1420 circa lectionem metheorum M. J. B. ('1420 concerning the lecture on the *Meteora* of Aristotle by M. J. B.') (beginning 'Sciendum quod tota terra...')

3) Fol. 130r: anno domini 1454 preambulum super lectionem Alkabicii quem legit magister Joh<annes> Borotin ('In 1454, the Preamble to the lecture course on Alcabitius which master Johannes Borotin lectured on').

There are, in addition, three comments in the first person:

4) Fol. 129v: 1449 pro theorica planetarum, quam legere tunc incepi, hec sunt scripta ('These notes have been written in 1449, for the *Theorica planetarum* which I then began to lecture on').
5) Fol. 165v: Ego qui pro ordinario meo hoc durum opus mathematice scientie mihi preripui ('I took up this hard mathematical text [Euclid's *Elements*] for my Ordinary Lectures').

The third comment appears to confirm that the first person is Borotin:

6) Fol. 66r: 1452 incepi legere astrolabium fer<ia> tertia ante Ascensionem Domini ego M. Jo… ('I, Master Jo… began to lecture on the Astrolabe on the Tuesday before Ascension').[i]

What we have are mathematical, astronomical and astrological texts written first in 1412 when Borotin was 34, to which, nearly 40 years later, the same Borotin added three more texts, on planetary astronomy, astrology and the astrolabe. But there is an obvious and understandable difference between these two sets of texts. In some of the earlier ones, Borotin is still a student, listening to lectures by Master Johannes Andreae; in the later ones he is the teacher.

Let us look in more detail at the evidence in the manuscript of what he learnt as a student and taught as a teacher. The first of the astronomical texts is a work on the uses of the astrolabe (fols 37r–65r, 'De utilitatibus astrolabii'), to which the date 1411 is given, and the attribution to 'Magister Cristanus'. This is, in fact, a false attribution. But Christian of Prachatice (who was born after 1360 and died in 1439), was also a teacher who wrote a very popular book on the composition and use of the Astrolabe in 1407 as the basis of his university lectures in astronomy. It survives in some 80 manuscripts and several printings from

i This evidence should be treated with claution. Alena Hadravová and Petr Hadrava, *Křišťan z Prachatic: Stavba a užití astrolábu*, Prague 2001, p. 77 read 'Alkabicium' for 'astrolabium' (understanding 'Alkabicium' to be an error for 'astrolabium') and conjecture that the Magister Iohannes is Iohannes de Nova Domo. But Borotin's lecturing in 1452 on an astrolabic text written in 1411 is compatible with his lecturing on Alcabitius 42 years after his first writing of the lectures (see below).

1477 onwards.[i] This is followed by an introduction to arithmetic by Jean de Murs (14th century, fols 48r–66r). The next text is a detailed commentary on Alcabitius's *Introduction to Astrology* (fols 72r–89v, with breaks) to which we shall return. Then come the canons to the *Alfonsine Tables* (fol. 90r–106v) – i.e., rules for using the standard astronomical tables of the time – to which Borotin has added a 'continuation' (fols 114r–115v). Then there is a commentary on Thebit Bencora's *De hiis que indigent expositione antequam legatur Almagesti* ('About those things that need explanation before one reads the *Almagest*'; fols 120r–129r). It is at the end of the second text that Borotin says that, after lecturing on Thabit's text, Johannes Andreae continued to lecture on Ptolemy's *Almagest* itself. It is these lectures that follow on fols 138r–161v of the manuscript.

Borotin's teacher, Johannes Andreae, better known as Schindel, is also mentioned in other sources as being a teacher of astronomy. He is best known as the designer of the astronomical clock on the Old Town Hall in the centre of Prague, which was constructed in 1410.[ii] So, in this manuscript we find Borotin in the presence of two other experts on the science of the stars.

Following the lectures on the *Almagest* are lectures on the *Elements* of Euclid (described as being '*ordinary* lectures on a difficult text' – i.e., lectures given on ordinary days, rather than on feast days), apparently by Borotin himself (fols 166r–178r), and on Alfragani (fols

i Hadravová and Hadrava, *Křišťan z Prachatic: Stavba a užití astrolábu*, provides a critical edition of the text, from all the manuscripts.
ii Spunar, P., *Repertorium auctorum Bohemorum provectum idearum post Universitatem Pragensem conditam illustrans*, 2 vols, Studia Copernicana, XXV, Bratislava, Warsaw etc., 1985, pp. 133–140.

181v–222r), the Arabic introduction to astronomy, which starts in a way reminiscent of the *Metaphysics*, but also use the adjective 'gloriosus' shared by the introductory lecture to Alcabitius: 'Scire et intelligere scientiam astrorum gloriosum est…'. These in turn are followed by notes on Aristotle's *Meteora* with the ascription, as we have seen, '1420 circa lectionem metheorum M. J. B' (fol. 222v). As we shall see, there is another manuscript containing a 'Lectura libri Meteororum…' delivered by Borotin in 1433. Since the *Meteora* is the most astronomical of Aristotle's works it is not surprising that Borotin should lecture on this too. The manuscript ends with the prediction of a partial lunar eclipse which will coincide with hostilities between the Czechs and the Germans ('Teutoni'), in the forest called Hwozd (fols 223v–224r).

But within the manuscript there is a sequence of pages written several years later. First the writer gives notes of his own lectures on the *Theorica planetarum* (of Campanus of Novara; fols 129v–130r, written 1449), the standard introduction to planetary astronomy of the time, and then he gives a preamble ('preambulum') in 1454 to the commentary on Alcabitius which had been written 42 years earlier, in 1413 (fols 130r–v).[i]

We learn from his Preamble[ii] that Borotin has been prevented from lecturing on this subject for several reasons, but that, as a teacher, he is required to hand on the knowledge that he has received. The reiterated reference to an 'open book' may be an allusion to a practice in degree ceremonies whereby the student who now has the 'magisterium' and the 'ius legendi' is handed a symbolic open book. At the end of this Preamble

i Borotin's lectures on the astrolabe (see p. 13 above), given in 1452, would also belong to the same period.
ii For the Latin text and English translation see the Appendix.

there is a reference to the text that occurs earlier in the manuscript – the untitled introduction to Alcabitius and the full commentary to the text. This Preamble shows that the introduction and commentary were meant to be delivered as lectures. Let us turn to them.

The introduction is a substantial text which would have occupied a whole lecture on its own. As one might expect, it starts with an invocation to the glory of God, the creator of the *machina mundi*, by which the heavenly bodies cause all movement in the sublunary bodies, and the creator of man, who is the only animal to be made to stand upright, with a round head, and a flexible neck, so that he can gaze at the stars. It includes a brief history of the study of astrology, starting from Noah, and documenting its spread throughout the Mediterranean cultures, but also to Indian and China, so that it 'encompassed the whole earth'. It gives the definitions of astronomy and astrology and describes their divisions. It counters objections that astrology is against the Christian faith, buttressing its arguments not only with the astrological authorities but also with the testimony of ancient philosophers, and more recent theologians.

The words and phrases of several of Borotin's predecessors can be recognized in this preface. The definitions of astronomy and astrology are taken from Ptolemy, 'Ali ibn Ridwan, Ptolemy's Arab commentator, and Abu Ma'shar, the last of whom also provides the history of the spread of their study. But many of these ancient authorities have been mediated through Borotin's more immediate predecessors in the art of astrology, whom he does not acknowledge. The first sentences are the same as the opening sentences of the thirteenth-century astrologer, Leopold, the 'son of the County of Austria', who expressed his piety by beginning his

astrological compendium on the day of the Nativity of Christ.[i] The divisions of astrology, however, are taken from John of Saxony's commentary on Alcabitius, which was the most popular commentary on the work up to (and after) Borotin's time.[ii] Nevertheless, Borotin is not a mere compiler from previous works; he has his own slant on the subject. This is indicated already in the way he deals with his quotation from John of Saxony. John had dismissed the astrological categories of great conjunctions, talismans and sigils (seals) as being subjects 'about which we have little or nothing'[iii] – and indeed John of Saxony does not refer to these categories in his commentary. Borotin includes this phrase, and immediately goes on to say: 'from all of which wonderful and stupendous effects are found to come into being under the moon'.[iv] That he is referring specifically to these last three categories is indicated by two substantial quotations from a book that describes the construction and operation of talismans, called *De esse et essentiis*.[v] This book happens to be attributed to Saint Thomas, an attribution that Borotin parades and

i *Compilatio Leupoldi ducatus Austrie filij de astrorum scientia Decem continens tractatus*, Augsburg, 1489.
ii First printed in Venice in 1485: *Libellus Ysagogicus… interpretatus a Ioanne Hispalensi scriptumque in eundem a Iohanne Saxonie editum*, and several subsequent printings, including that of Simon de Colines (Colinaeus) of Paris 1521, which is used in this article.
iii Alcabitius, *Libellus Ysagogicus*, ed. Simon de Colines, fol. 34r: 'Praeter istas sunt quaedam aliae partes iudiciorum, scilicet de coniunctionibus magnis, de imaginibus, de sigillis, de quibus parum vel nihil habemus'.
iv See p. 34 below, § 29.
v Thomas Aquinas, *De esse et essentiis tum realibus tum intentionalibus*, ed. Venice 1488. The title, of course, is very similar to that of the genuine work by Thomas Aquinas, *De ente et essentia*.

does not question (as Jeronimo Torrella was to do in 1496),[i] for it gives the seal of church approval to the use of talismans.

He first appeals to the authority of this book to indicate that the science of the stars was in fact known before Noah; for Saint Thomas refers to a very ancient volume written by no less than Abel the son of Adam.[ii] His second reference to the book occurs immediately after his mention of the talismans and sigils as divisions of astrology.[iii] The context is a rather theoretical discussion as to whether the stars have souls; Borotin considers that they rather have *intelligences* moving them, and illustrates this by citing examples of the practice of talismanic magic taken from the *De esse et essentiis*, including the author's own experience of the efficacy of a talisman that he used to prevent horses from passing his window and disturbing his sleep. Borotin uses these stories to justify the belief that intelligences rule the stars rather than that the stars have souls, which is the conclusion of Pseudo-Thomas Aquinas.[iv]

The other distinctive passage is that with which Borotin ends his introduction. Here the argument is that the stars must have an effect, since plants and stones and, above all, words have an effect. For this he brings in another ecclestiatical authority, no less than a pope: 'Innocent the Great'. In fact, the quotation comes from a popular confessional written

i Hieronymus Torrella, *Opus praeclarum de imaginibus astrologicis*, ed. Nicolas Weill-Parot, Florence 2008, p. 147.
ii See p. 30 below, §17, and *De esse et essentiis*, Sig. B iii r.
iii See p. 33 below, §30, and *De esse et essentiis*, Sig. B iii r–v. Pseudo-Thomas's source is *Liber scientiarum ex scientia Abel*, *Liber Lunae*, MS Florence, BNC, II.III.214, fols 15r–20r: prologue, fol. 15r–v and cap. 8, fol. 18v (*De ligatione bestiarum ne impedientur*), identified by Weill-Parot, in Torrella (n. 18 above), p. 147, n. 61.
iv See p. 34 below, §34.

by Thomas of Chobham in ca. 1217.[i] Chobham is lamenting that his contemporaries no longer have the knowledge of the power of words, as King Solomon used to have. Chobham is thinking of the words used in a religious context ('verba sacra'), but Borotin turns this argument around in order to justify the power of the stars:

> If words have this kind of power over natural things, why should not the stars and celestial bodies have <this power>?

With these words the introductory lecture comes to an end. Borotin then goes straight into explaining the words of Alcabitius's *Introduction to Astrology*. His commentary, however, proves to be a little disappointing, since it follows very closely that of John of Saxony.

Who was this John of Borotin? In fact, we have several other testimonies to his career and interests.[ii]

Borotin lived through one of the most dramatic periods of Czech history, i.e., that of the Hussite revolution. The University was a focal point for this revolution.[iii] Jan Hus, the reformer, was the leading

i See p. 27 below, §44–47.

ii The following information is drawn from F. M. Bartoš, 'Doktor Jan Borotín a kronika starého kolegiáta', *Jihočeský sborník historický*, 19.2 (1950), pp. 37–45; Josef Tříška, *Repertorium biographicum universitatis pragensis praehussiticae 1348–1409*, Prague, 1981, pp. 223–4; Spunar, *Repertorium auctorum bohemorum* (n. 9 above), I, 140–145.

iii For this period see F. Šmahel, *Die Hussitische Revolution* I–III, Hanover, 2002, for the University of Prague see *A History of Charles University*, vol. I 1348–1802, ed. by I. Čornejová – M. Svatoš with collaboration of P. Svobodný, Prague 2001. For the life and work of Jan Hus see for example Matthew Spinka, *John Hus. A biography*, Princeton, 1968 and the forthcoming study of Ota Pavlíček, The Chronology of the Life and Work of

exponent of some of the doctrines of John Wyclif, which had arrived in the university in the late fourteenth century. Having been a student at the university he played an important role there, as a reform preacher and teacher in the faculty of Arts, becoming Dean of the Faculty of Arts in 1401, and Rector of the university in 1409. During this period there was a swell of support for native Czechs. This culminated in the decree of Kutná Hora, issued by King Wenceslas IV in 1409, giving the 'Czech nation' of the university three votes to a single vote of the other three university nations together (Polish, Bavarian and Saxonian), resulting in a mass exodus of the other university nations, and the foundation of a new university in Leipzig. The University of Prague lost its international status and it took some time to recover its academic standing. Meanwhile tensions arose between the Faculty, the students, the king and the archbishop, concerning the support of Wycliffian ideas, and of one or other of the three claimants to the papacy.[i] These tensions mounted dramatically until, in 1415, in an attempt to reconcile the parties of the different popes at the Council of Constance, Hus was put on trial, condemned and burnt at the stake (6 July 1415).

Borotin was a supporter of Hus. We know from his own testimony that he was born in 1378,[ii] a few years after Hus (born ca. 1370–2). He studied at the University of Prague where he took his

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Jan Hus, in F. Šmahel (ed. in collaboration with Ota Pavlíček), *A Companion to Jan Hus*, Leiden – Boston (forthcoming).

i For the reception of Wyclif's ideas in Prague see, for example, F. Šmahel, 'Wyclifs Fortune in Hussite Bohemia', *Bulletin of the Institute of Historical Research* 43, May 1970, pp. 16–34 published also in F. Šmahel, *Die Prager Universität im Mittelalter. Gesammelte Aufsätze / The Charles University in the Middle Ages. Selected Studies*, Leiden – Boston, 2007, pp. 467–489 and V. Herold, *Pražská univerzita a Wyclif*, Prague 1985.

ii See above, p. 11.

bachelor's degree in Arts in 1400 and his master's in 1410. In 1415 he followed in Hus's footsteps by becoming the Dean of the Faculty of Arts in 1422 and Rector of the University in 1425–6. Most interestingly, in 1411, he was one of the teachers at the university who are depicted as taking part in a solemn disputation *de quolibet* (a debate on 'anything you like'), organised by Jan Hus in that year in order to 'exercise the talents of the university'.[i] The masters took on the names of ancient and more recent authorities, and it is significant that Borotin is given the name 'Avicenna', the eleventh-century Arabic philosopher and medical writer. When it comes to his turn, he is introduced in the following way:

> Hanc autem difficultatem venerandus Magister noster, Magister Io<hannes> de Bo<rotyn>, cum sit preclarus perspectivus et medicus, velud Avicenna alius, nostro auditorio declarabit. Unde proponitur sibi questio sub hac forma: Utrum sensaciones fiunt per extramissiones virtutum ab organis sensitivis ('Our venerable magister, magister Iohannes de Borotin, since he is a brilliant perspectivist and doctor, like 'another Avicenna'. Hence a question is proposed to him under this form: "Do sensations occur through extramission of powers (virtues) from the organs of sensation?"').[ii]

i Jan Hus, *Disputationis de Quolibet Pragae in facultate artium mense Ianuario anni 1411 habitae enchiridiion*, ed. Bohumil Ryba, Turnhout 2006; see p. 6: 'ne alma nostra universitas sine exercicio in scienciis sterilesceret'.
ii *Ibid*., p. 255. While the designation 'Avicenna' would primarily recall the author of the medical *Canon of Medicine*, the discussion of sight is found in Avicenna's *Liber sextus de*

We have other evidence that he studied medicine. A manuscript of medical texts in the Prague Castle Archive (MS Prague, Metropolitan Chapter Library, L.15) belonged to him. He wrote a preface to the *Aphorisms* of Hippocrates in 1424[i] and he lectured on the *Isagoge Iohannitii* in 1430. One manuscript contains both texts, and the note against the *Isagoge* that 'I heard this book following the reverend master Johannes de Borotin, which he finished <lecturing on> in 1430.[ii] In 1433 we also find him lecturing on the *Meteora* of Aristotle.[iii] He participated not only in the Quodlibet of Jan Hus but also in quodlibets of 'Michael de Malenicz dictus Czizek' (1412) and Procopius de Kladruby (1417).[iv] Above all we know that he was active in promoting the Utraquist cause – i.e., the advocacy of accepting communion in both bread and wine – 'both kinds' ('in utraque specie') – which was at the heart of Hussite doctrine and was first propagated by Jacob of Mies, a reform theologian at the Prague University, in 1414.[v] We find him adopting this position in letters to Saint John Capistran and Jan Rokycana (in this case, in which he and Rokycana supported the same cause, he wrote a secret letter, in verse).

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*anima*, part of his philosophical *al-Shifa'*: see Dag Nikolaus Hasse, *Avicenna's* De Anima *in the Latin West*, London and Turin, 2000, pp. 107–127 ('The Theory of Vision').

i MS Prague, Národní knihovna České Republiky, X H 23, fol. 48v: 'M. Johannis de Borotin proemium Aphorismorum Hippocratis'.

ii MS Prague, Národní knihovna České Republiky, X H 16, fol. 20r: 'Istum libellum audivi post rev. M. Iohannem de Borotyn, quem finivit a. 1430 feria tercia in decollacione Iohannis…'

iii MS Prague, Národní knihovna České Republiky, VII E 9, fols 197r–176r: 'Anno Domini 1433 feria quarta ante Salus populi Magister Borotin finivit lecturam istius libri. Finis huius textus prima V. fer. In Ieiunio A. 1433 in Nazareth': Charles Lohr, *Medieval Latin Aristotle Commentaries Authors*: Jacobus – Johannes Juff, *Traditio*, 26 (1970), pp. 135–216 (see p. 158).

iv For the quodlibetal disputations in Prague in general as well as in particular see Jiří Kejř, *Kvodlibetní disputace na pražské universitě*, Prague 1971.

v See P. De Vooght, *Jacobellus de Stříbro († 1429), premier théologien du hussitisme*, Louvain 1972.

Finally, an enigmatic reference to him in a note in a manuscript suggests that he may have combined his attacks against the evil practices of the church with an interest in the magical and miraculous, for we read:

> Anno Dominice incarnacionis 1454 f. Va ante Urbani hoc experimentum per Magistrum Borotin in sua leccione, quod ipse expertus est fuit pronunciatum: quod quidam puer nondum habens facultatem loquendi hec verba protulerit: ve, ve ve sacerdotibus, qui gladium in populum christianum inducunt' ('In 1454, on the fifth day before the Feast of Urbanus, this experiment was announced by Master Borotin in his lecture as something that he had experienced himself: that a certain boy who was not yet able to talk, spoke these words: "Alack, alack, alack for the priests who bring the sword against the Christian people"').[i]

This is reminiscent of the words at the end of the introductory lecture to Alcabitius in which the power of words is stressed.

So, we find ourselves in the presence of a respected university teacher, involved in teaching and administration over a period of almost fifty years; a colleague of Jan Hus, but also of two other teachers who acquired a reputation for their astronomical skills, Christian of Prachatice and Schindel. In Borotin's later years the University of Vienna became

i MS Prague, Metropolitan Chapter Library M 75, on a flyleaf ('in folio operculo inf. adligato').

the focal point for astronomy, with scholars such as Georg Peurbach and Johannes Regiomontanus, the authors of the *Epitome* of the *Almagest*, written in reaction to George of Trebizond's translation of the work. But in an atmosphere in which Ptolemy's *Almagest* was being retranslated directly from Greek and a new interest in astronomy was being generated, it is not without interest that Borotin, as (apparently) his last contribution to scholarship, decided to lecture on Alcabitius and spoke eloquently about the validity of astrology and the efficacy of the stars.

## Appendix: Edition and Translation of John Borotin's Preamble and Introductory Lecture to Alcabitius

In the following transcription of the Preamble and the Introductory Lecture on Alcabitius, < > indicate editorial additions, [ ] deletions; \ / indicate additions by the author. Borotin's handwriting sometimes deteriorates to the point of being illegible. As is the nature of a rough draft, there are repetitions, insertions, and deletions by the author, which are indicated in the notes. Punctuation and capitalization has been added to show the articulation of the phrases. Section numbers have been added to facilitate reference. Italics indicate unclear readings, or uncertain realisation of abbreviations.

Abbreviations:

a.c. = ante correctionem

add. = addidit

al. man. = alia manus, alia manu

del = delevit

p.c. = post correctionem

sup. lin. = supra lineam

*** = non legitur

I. The Preamble

Fol. 130r. <1> Anno domini 1454: preambulum super lectionem Alkabicii quem legit magister Iohannes Borot<in>[i]. et incepit feria tertia ante diem sancte Sofie est hoc.

<2> In nomine Domini, Amen, cuius nutu sermo accipit gratiam, cuius gratia intellectus accipit prudentiam et animus hominis disciplinam, aggrediamur hoc opus quod legere intendimus, doctrinam videlicet sapientis Alkabicii in iudicia astrorum; per hunc librum suum introductorium iam tractemus, ut eam scilicet in corda audientium in ea studere volentium, Deo auxiliante, infundamus. <3> Ego enim ante hoc tempus doctrinam ipsius legere pro utilitate audiencium \et ad meum exercicium/ legere inceperam, set intervenientibus causis ad cessandum o<p>portunis hucusque cessavi. Set iam revolvens in animo meo diligenter intellexi quod officium magisterii nomine quod indignus suscepi urget me ut thesaurum scientie quem accepi aliis distribuam, eo quod librum apertum et non clausum in magisterio meo receperam. Sic quod ut lectionem quam in Alkabicio inceperam, ut resumam id intravi, duce Deo. <4> Dicit enim sapiens: 'Thesaurus absconditus et scientia aliis non errogata, que utilitas in utrisque?'[ii] Quasi dicit: ne forte reus efficiar talenti quod ille servus acceperat et in terra fodierat neque lucrum inde faciendo, pro quo argutus est a domino suo, ut scribitur in Matheo.[iii] <5> Magister enim ex officio magisterii sui tenetur alios docere. Ob hoc

i Borotin] Borot *** *MS*

ii Hugo of Saint Victor, *De arca Noe*, book 2, chapter 5, ed. P. Sicard, Turnhout, 2001, p. 41: 'Thesaurus abscondita et scientia abscondita, que utilitas in utrisque?' This in turn recalls St Jerome, *Commentarii in Ezechielem*, book 10, chapter 33.

iii Mat 25, 14–30.

enim quando magisterium accipit venitur ad kathedram, datur sibi liber apertus et non clausus, ut iam tamquam magister de kathedra doceat. Libet enim, quoniam utilis proficiat. /fol. 130v/ <6> Et idem est quod dicit Boetius libro *De consolatione philosophie*: 'Nichil enim est quod me plus movit ad magisterii officium quam utilitas'.[i] <7> Ut igitur ego vobis digne et utiliter scientiam hanc astronomie in corda vestra infund<am>, iuvenalia tamen ellex*er*o, dummodo auxim, set quo fund.. exordium. Ita D<eus> presens huic operi sit, gratie divinitate me iuvet et faciat complere quod utile fuerit, sequitur quia prospera lux ostenditur linguis animis (omnibus?), quod favetur *** [ii] <8> Vide ante circa introductionem Alkabicii que incipit 'Gloriosus deus et sublimis'.

## II. The Introductory Lecture

<9> Gloriosus Deus et sublimis, qui omnia verbo creavit quique terram in celi medio sapientissime collocavit, ut corpora celestia ei virtutum suarum, quas a suo Creatore acceperant, effectus imprimerent, ipsam terram tamquam receptaculum virtutum celestium \inmotum/ mirabiliter collocavit. <10> Quod autem Dominus seculorum mundanis rebus quas sub lunari globo posuit instabiles et caducas impressiones faciat per superiora corpora stabilia et perpetua, que a Luna sursum celi nomine designantur, solus ille ignorat qui mente obstinatus aut carnalis vite mollitie alligatus, opera superiorum et passiones[iii] inferiorum non

i Boethius, *De consolatione philosophiae*, I, 4: 'nullum me ad magistratum nisi commune bonorum omnium studium ', ed. K. Büchner, Heidelberg, 1960, p. 11
ii The following two lines are impossible to decipher.
iii passiones] porciones *MS*

considerat nec observat.[i] <11> De quibus effectibus scientiam astrologus subtilissime mirabiliterque perscrutatur, quam[ii] videre ym<m>o et cognoscere cupientes, hic noster Alkabicius[iii] tamquam eius \dux et/ autor precipuus[iv] omnibus ingredi volentibus [h]ostium eius apperi et ad ea<m> suaviter introduci. Antequam igitur [h]ostium eius[v] veniamus, probatissima eius introductione et ..*bli*.. intellectu eorum que con*tine*nt astrorum scientiam, cuius presens hic libellus principium est.

<12> Sciendum est quod summus rerum dominus, Deus, universe mundane creature naturam miro quodam et stupendo condidit artificio, ut in contemplacione celestium et terrestrium mens humana non quiescat, sed, specul*ando* .4. elementorum molem, situm et ordinem, qualiter moles terre in medio mundi velut centrum in circulo sit suspensa, qualiter maria et flumina terram circuientia col<l>ocantur, qualiter aeris et ignis magnitudo circumferuntur, et plurima alia mirabilia que tam breviter pertranseo, ad partem celestem incorruptibilem transcendat, cum nichil magis oblectet animos, nichil mentem plus erigit ad divina, quam celorum inclitam contemplari pulcritudinem, astrorumve agitantem coream, per quam huius mundi machina sub Deo regitur, subiecta virtuti militie celestis exercitus que cursu velocissimo et tranquillo, sponsam diversitate

i nec observat] *add.* Quodque nonnulli qui querunt a simplicibus astronomi nuncupari, ut igitur in eius oculos mentis… possumus infigere' *sed del. MS* ,. Gloriosus… nuncupari] This corresponds to the opening of the preface of Leopold of Austria's *Compilatio Leupoldi ducatus Austrie filij de astrorum scientia Decem continens tractatus*, Augsburg, 1489.

ii Two unreadable words follow, which have been crossed out.

iii A reference mark here is picked up by the word 'astra' in the margin.

iv The text continues with 'omnes ingredi volentes', which has been crossed out.

v eius] *add. marg.* Iste igitur arguat theorice

motuum quadam mobilitate absque fatigacione protendit in evum ad exercitium humani ingenii perhen<n>e spectaculum. <13> Quo spectaculo nichil \hic/ melius, nichil admirabilius, nichil pulcrius. Quid enim in mundo spectabilius Solis iubare mundum illustrante? Quid mirabilius vario et diverso incessu planetarum necnon multiplici defectu corporis \solaris et/ lunaris? Et quid terribilius quam lunarium tristes et continuate eclipses, quas cum intuentur et bestie pertiment, et se interius in suis abscondunt cavernis? <14> Quapropter natura primum homines exercitatos, celsos et rectos constituit, ut deorum congregationem idest (?) stellarum celum intuentes capere[i] possent unum esse (?) Deum... ut scias, inquit,[ii] /72v/ naturam nos spectare \celestia/ voluisse, in media nos sui parte constituit et tantummodo homines ultra bruta erexit, ut ab ortu sidera in occasum labentia prosequi posset, et vultum suum circumferre, sublime fecit caput, et collo flexibili imposuit, <15> quatenus rotunditatem celestis plausus aspiceret, et quam mira celeritate moderatur[iii] omnis conversio, qualiter apparet vicissitudines anniversarias perpetuis motibus renovari et subdit, et qualiter ipse conditor celorum, Deus, ex vario celorum motu nunc famem, nunc pernicacem pestem, nunc hor<r>enda bella, nunc aquarum inundaciones, nunc seditiones etc. in hoc inferiori mundo causari permittit, quapropter ad evitandorum malorum subsidium astronomiam dignatus est hominibus revelare.

<16> Fuit enim hec scientia Noe Prophete primitus post diluvium revelata \ut ex dictis antiquorum haberi potest. Unde Ovidius tertio *De vetula* loquens de astris dicit: ‘hec scripsit prior ille propheta Noe

i capere] carpere *a.c.* capere *p.c. Ms*
ii inquit] *add. marg. inf. al. man.* vel reputavit dominus sapientes et se ad
iii moderatur] *add. sup. lin*. moveatur

venerandus et docuit primogenitus Sem filius eius',/[i] quia non dubitamus quod ante diluvium plures eam habuerunt, sicud Abel filius Ade, ut dicit sanctus Thomas in *Libro de esse et essentia*, ubi dicit: 'Vidi librum quendam antiquissimum editum ab Abel filio Ade quem Cayn interfecit mirabilis materie et effectus'.[ii] <17> Noe vero ipsam docuit Caldeos, ut dicit Albumasar in suo Introductorio.[iii] Ex Caldeis vero pervenit ad Indos, deinde ad Egiptios, ab Egiptiis venit ad Persas, deinde ad Romanos et Grecos, deinde ad Sinos, post ad Saracenos, et ultimo ad nos, et sic iam totum circuivit universum. <18> Pro ipsius autem astronomie meliori declaracione notandum est quod astronomia a Guidone sic describitur: 'Est ars que cursus siderum et habitudines stellarum inter se et circa terram considerat'. [iv] <19> Ex quo habetur quod astronomie sunt due partes: prima est de orbibus et astris in se consideratis, et hec proprie dicitur astronomia, quasi astrorum lex, et potest sic describi: 'Astronomia est astrorum lex, que cursus siderum, figuras, magnitudines ac habitudines ipsorum inter se et circa terram indagabili ratione

i Pseudo-Ovid, *De vetula*, III, 634–5, ed. Dorothy M. Robathan, Amsterdam 1968, p. 132: 'Hec scripsit prior ille propheta Noe venerandus, / Et docuit primogenitus Sem filius eius'. This information, in turn, comes from Albumasar, *Introductorius maior*, Book V, chapter 9, ed. Richard Lemay, Abu Ma'shar al-Balhi [Albumasar], *Liber introductorii maioris ad scientiam judiciorum astrorum*, 9 vols, Naples, 1996–7, 1V, p. 199: 'Et dicitur quod qui docuit eos primitus fuerit Sem filius Noe'.

ii Pseudo-Thomas Aquinas, *De esse et essentiis*, Sig. B iii r.

iii Albumasar, *Introductorius maior*, Book V, chapter 9 (n. 48 above), V, p. 199. Albumasar does not mention the Romans, Greeks and Chinese.

iv Bonatti, *Decem libri*, Book I, Ch. 11, Venice 1551, col. 16: 'Astrologia...est scientia magnitudinis mobilis, quae cursus syderum et habitudines stellarum circa se et circa terram certa ratione perquirit'. This, in turn, is a quotation of Gundissalinus, *De divisione philosophiae*, ed. Baur, p. 115 (with 'indagabili ratione' = Isidore, for 'certa ratione'; see next note). *In margin:* 'De qua tractat hic theorica planetarum'.

perscrutatur'.[i] <20> Sed astrologia est scientia per quam sciri possunt mutaciones et opera contingentia in rebus que sunt circa nos, quia, ut dicit Ptolomeus in *Centum verbis*: 'Vultus huius seculi sunt subiecti vultibus superiorum'. <21> Et Hali ibidem exponens hec verba dicit: 'Ptolomeus vultus huius seculi dicit species animalium et plantarum etc., et quod omnibus istis vultibus seu speciebus vultus consimiles sunt in celo <id> mane<n>tes. Verbi gratia, Scorpio celestis terrenis scorpionibus dominatur, serpens celestis terrenis serpentibus etc. et *introdu<ci>t* exemplum pulcrum.[ii] <22> Et Plato in *Thimeo* dicit: 'Iste mundus sensibilis factus est ad similitudinem mundi architipi'.[iii] Et Philosophus primo *Metheororum*: 'Est enim iste mundus contiguus lacionibus superiorum, ut tota eius virtus inde gubernetur',[iv] vel sic: 'Astrologia \vero/ est scientia que celestium /73r/ corporum effectus, mutaciones et opera in ist*is* inferioribus observat et, quia rerum effectus secuntur ad eorum motus et situs, necesse habet astrologus recipere ab astronomo doctrina<m>, qua motus et situs celestium cognosceret respectu terre in qua fiunt; et *exinde* iudicium de effectibus certum daret'. <23> Ite<m> differentia est inter astronomiam et astrologiam, quia illa solum motus, figuras et magnitudines et orbium et stellarum, ista vero effectus *exinde*

i Isidore of Seville, *Etymologies*, Book 3, chapter 24: 'Astronomia est astrorum lex, quae cursus siderum et figuras et habitudines stellarum circa se et circa terram indagabili ratione percurrit'.

ii Ptolemy, *Centiloquium*, Venice 1493, fol. 107v: 'Verbum 9: Dixit Ptholomeus... vultus huius seculi sunt subiecti celestibus vultibus et ideo sapientes qui ymagines faciebant stellarum introitum in celestes vultus inspiciebant et tunc operabantur quod debebant. In hoc capitulo vult Ptholomeus multa ymaginum secreta patefacere et vultus quos in hoc seculo esse dixit sunt species animalium et species plantarum et ideo dicit quod omnibus istis speciebus dominantur sibi consimiles in celo manentes. Verbi gratia: Scorpio celestis terrenis scorpionibus dominatur, et celestis serpens terrenis serpentibus. '

iii This is a summary of Timaean doctrine, rather than a direct quotation.

iv Aristotle, *Meteora*, 339a, 21–23. The quotation resembles most closely the form in *Auctoritates Aristotelis*, ed. Jacqueline Hamesse, Louvain and Paris, 1974, p. 171.

consurgentes considerat, sepius tamen una[m] sumitur pro alia.[i] <24> Et sic dividit istam scientiam Albumasar in Introductorio suo magno, d<icens>: 'Due sunt species[ii] astronomie: una est scientia totius, scilicet scientia de circulis et motibus ipsorum, secunda est ars iudiciorum astronomie'.[iii] <25> Hanc divisionem etiam po<ni>t Tolomeus in p*roem*io Quadripartiti sui et Hali in commento ibidem.[iv] <26> Prima species[v] est tradita perfecte et complete quantum ad principia, conclusiones[vi] et demonstrationes integraliter et subtilissime a Ptolomeo in Almagesti[vii] set narrative tradita est ab Alfragano, Albategni per aerem (ascensionem?) spere un*iversa*lis (?) et cetera, cuius tres sunt partes: prima est de figuris, numeris, ordinibus, quantitatibus <et> proportionibus corporum celestium; secunda pars est de moti<bu>s et de hiis que accidunt astris ex diversitate situs eorum ex motu *uti* sunt coniunctiones, eclipses, quadrature, elevacio, depressio, velocitas, tarditas etc.; tertia est de diversitate dierum, climatum et noctuum secundum unamquamque regionem et hec si*militer* tradite sunt per aeres (ascensiones?) suprascriptas. <27> 'Secunda species,[viii] scilicet ars iudiciorum de qua est astrologia, habet .4. partes principales. quarum prima est de

i alia] *add marg.* sicud est hic theorica
ii species] sensus *MS*
iii astronomie] *add. marg.* Idem hic theorice
This is a summary of the argument in Albumasar, *Introductorius maior*, Book 1, chapter 2: see ed. Lemay, V, pp. 7–8.
iv Ptolemy, *Quadripartitum* with the translations of Plato of Tivoli and Aegidius de Tebaldis, and the commentary of 'Ali ibn Ridwan, Venice, 1493 (incipit of Plato of Tivoli's translation): 'Res, Iesure, in quibus est pronosticabilis scientie stellarum perfectio magnas et precipuas duas esse deprehendimus…'
v species] sensus *MS*
vi Albumasar in Introductorio…conclusiones] This reproduces John of Saxony, *Libellus Ysagogicus*, preface, ed. 1521 (Colinaeus), fol. 25v.
vii a Ptolomeo in Almagesti] John of Saxony, *ibid.*
viii species] sensus *MS*

interrogationibus, secunda de nativitatibus, tertia de revolutionibus annorum, et hec est duplex, scilicet revolucio annorum mundi et revolutio annorum nativitatum. <28> De istis .4. partibus Hali Abenragel fecit unum librum completum; Ptolomeus autem in Quadripartito obmisit duas partes, scilicet de interrogationibus et electionibus. <29> Preter istas sunt quedam alie partes iudiciorum, scilicet de coniunctionibus magnis, de ymaginibus, de sigillis etc., de quibus parum vel nichil habemus,'[i] ex quibus omnibus mirabiles et stupende effectus inveniuntur fieri sub Luna. 'Propter hoc quidam [posuerunt] philosophorum et astrologorum antiquorum posuerunt corpora celestia esse animata et rationalia ex eo quod videbant effectus eorum quasi rationales circa ista inferiora, propter quod posuerunt ipsa esse deos et adorabant. Videbant enim quod per ipsa operabantur mala et bona fortuna super terram'. <30> Unde dicit Sanctus Thomas[ii] ibidem ubi loquitur istam materiam in libro *De esse et essentia*: 'Set quantumcumque habeant effectus mirabiles et stupendos corpora celestia,[iii] non tamen propter hoc habent animas, /73v/ set habent intelligentiam moventem et regentem ipsa, non tamen est forma ipsorum quia aliam formam habent per quam cum materia habent esse'. <31> Et subdit contra illos qui hanc artem dicunt esse vanam et erroneam, dicens:[iv] 'Et quantumcumque per rationem et fidem hoc credam, tamen hec operacio valde in me operata fuit, cum vidi librum quendam antiquissimum mirabilis nature et effectus editum ab Abel filio Ade quem Cayn interfecit, qui presciens diluvium invenit lapidem et fregit et dictum librum ymaginum in ipso abscondit. Unde in ipso libro ponit nomina

i secunda species…nichil habemus] John of Saxony *ibid.*
ii Thomas] *add. marg.* Thomas de esse et essentia et hic nota (?) partem
iii corpora celestia] *marg.*
iv dicens] *add. marg.* Nota S. Thomas dicit quid de astrologia

intelligentiarum regentium ipsos planetas et ponit .vii. intelligentias, et nomen intelligentie moventis primum celum. Hec igitur nomina sunt tante efficacie ut, si ymaginem secundum diversitatem planetarum in signis diversis sub diversis faciebus existentibus, nomenque domini planete sub quo ymago facta fuerit in ymagine scripseris, et nomen facti pro quo fit ymago, voluntatem tuam in omnibus exeq*uer*is. Ibi enim docet facere ymaginem, cum qua, si tetigeris omne metallum, fiet aurum. Ibi etiam docet facere ymagines quasi de omnibus fortuniis bonis et malis. <32> Non tamen' dicit Sanctus Thomas 'has omnes ymagines probavi nisi unam, quia cum multitudo equorum mane transierunt ad aquam, non permittentes me dormire, et me infestarent quolibet die, feci ymaginem equi secundum quod ibi precipitur, et sepelivi eam in curreria illa, extunc illuc nullus equus transire potuit, set cum perveniebat ad locum ubi *erat* ymago, eum locum non poterat pertransire quantumcumque stimularetur et[c] mutaverit viam. Propter quod experimento didici esse vera. <33> Narravit etiam michi quidam quod fuerat ymago de stanno secundum quod in dicto libro precipitur, Luna existente sub secunda facie Aquarii,[i] et scripsit nomen domini sive intelligentie Lune et fecit illa que erant necessaria secundum quod ibi precipitur et volens deridere puellas cuiusdam op<p>idi, posuit dictam ymaginem in aquam fontis, unde omnes utres et vasa quibus tangebant aquam frangebantur.'[ii] <34> Sunt etiam ibi quedam ymagines ex quibus scientia augetur ex quadam irradiacione illius intelligentie sub qua fit quis sapiens'. Ex quo quidam ponunt quod corpora supercelestia a formis suis has stupendas et amirandas influentias non habeant, set pocius ab intelligentiis regentibus

i Aquarii] *add.* non retrograda *sed del.*

ii Philosophorum et astrologorum (§29) … frangebantur' corresponds to Pseudo-Thomas Aquinas, *De esse et essentiis*, Sig. B iii r–v.

ipsa, que Sanctus Tho*ma*s partem ut supra. <35> Ex quo igitur isti actus quoque effectus mirabiles virtute corporum celestium fiunt in istis inferioribus, ut testimonio plurimorum sapientum tam fidelium quam gentilium evidentissime comprobatur. /fol. 74r/ <36> Constat astrologiam, que est de illis effectibus qui per artem humanam possunt inveniri, fore veram, ymmo verissimam, scientiam, licet aliqui ei multa superstitiosa admiscentes, eam to*tam* dica<n>t esse falsam et erroneam que sic non est ars set error et quedam superstitio ab ecclesia prohibita, quia ut sic est species mathematice dicte a Mathesi filia Tyresye, media producta, que prima div*inati*onem dicitur invenisse, etc., set prout est vera ars tunc est species mathe*matice* vere scientie dicte a 'mathesis' quod est scientia, et de illa est nostra hic intencio. Unde illud: 'Scire facit matesis set dat divinare matesis, ut in tant li(?).'[i] Idque in libro super Danielem. <36> Hanc etiam scientiam de iudiciis confirmat Ptolomeus in Quadripartito suo, et Albumasar in Introductorio suo magno.[ii] Unde ambo in confirmando iudicia incipiunt ab opere Solis. <37> Unde Ptolomeus in 13 propositione prime partis dicit quod 'Sol cum aere operatur in rebus omnibus existentibus in terra'.[iii] Et Haly exponens dicit: 'Ptolomeus vult nobis ostendere quod spera ignea et aeris que mutantur per corpora celestia mutant res omnes que sunt inter nos'.[iv] <38> Item Hali in commento 20 propositionis dicit quod 'radices huius scientie adeo sunt manifeste quod plures quasi nichil scientes sciunt <et> intelligunt eas

i ut in tant li?] *add. marg.* hic ostenditur (?) astrologia partim naturalis (?)'.
ii magno] *add.* et Haly in commento *et del.*
iii Ptolemy, *Quadripartitum*, trans. Aegidius of Tebaldis, fol. 4rb: 'Quoniam Sol cum aere operatur in rebus omnibus existentibus in terra'.
iv *Ibid.* (continuation from previous quotation): 'Ptholomeus vult nobis ostendere per hec verba quod sphera ignis et aeris que mutant per corpora celestia mutant res omnes que sunt inter nos'.

ins*piciendo* ipsas';[i] et Ptolomeus dicit 'Populares sciunt res antequam accident et quod magis est' ipse dicit 'Animalia muta sciunt res antequam accident'.[ii] <39> Et Albumasar contra negantes iudicia astrorum, quos dividit in 10 sectas, arguit multis et evidentibus rationibus eorum oppositiones destruendo, que longum esset declarare.[iii] <40> Ex hiis omnibus sequitur quod ista scientia, cum sit vera scientia, non est erronea ut est contra fidem sicud plurimi ignorantes et rudes nituntur asserere, qui, quantum in eis est, omnem scientiam mundi non solum negare set et abrad*ica*re festinarent, ut abiectis sapientibus seu philosophantibus in sua ignara insipientia libentius sine reprehensione permanerent,[iv] quibus dicendum: 'Nolite fieri sicud equus et mulus[v] etc. rem (?) quia iam non philosophia set philopecunia regnat,[vi] iam namque 'ditari volunt potius quam philosophari'.[vii] <41> Olim namque sacerdotes in Egipto, acquisitis necessariis, propter animam (?) ceperunt philosophari, nunc vero[viii] non solum non philosophantur set si qui sunt philosophantes eos odiunt et dedignantur, quia iam non philosophia set filopecunia regnat, ideo ditari volunt potius quam philosophari. <42> 'Sic te prostituunt, o virgo scientia, sic te venalem faciunt castis amplexibus aptam, non te propter te

i *Ibid.*, fol. 5ra: 'Dicit quod radices huius scientie sunt adeo manifeste quod populares nihil scientes de scientia sciunt et intelligunt eas inspiciendo et experiendo ipsas.'
ii *Ibid*., fol. 5ra: 'Sciunt antequam accident nescii populares. Et dico magis quod hec intelligunt animalia multa.'
iii Albumasar, *Introductorius maior*, Book 1, chapter 5 (refutation of the ten kinds of people who are critical of astrology or bring it into bad repute).
iv permanerent] *add. marg.* 'ut vivere possint sicud bruta, verum rectorem hu*mana*/h*abend*a (?)'.
v Ps 31, 9.
vi Pseudo-Ovid, *De vetula*, I, 759 (ed. Robathan, p. 76): 'Sed philosophia /Exilium patitur et philopecunia regnat'.
vii Pseudo-Ovid, *De vetula*, I, 719 (ed. Robathan, p. 75): 'Ditarique volunt potius quam philosophari'.
viii vero] *add.* philosophantes scilicet qui sunt *sed del.*

querentes, set lucra per te'. Nunc igitur 'matesis[i] vix inveniet qui iam velit ipsam', quia 'omnes declinant ad ea que lucra ministrant utque sciant discunt pauci, plures ut habundent:'[ii] Ovidius *De vetula* /74v/

<43> Vos autem non sic, ne efficiamini similes illis, \set/ hanc scientiam reputantes esse veram et rectam, eam amate et ad eam cognoscendam totis viribus festinate, cuius principiorum notitia in hoc libro Alkabicii qui introducit nos in eam sufficienter est consolida. Qui bene doctrinam huius libelli intellex*er*it, poterit omnes libros iudiciorum per se legendo intelligere valde plane. Qui sic incipit: 'Postulata a domino etc.'

<44> Set quid dicerent illi qui hanc reprehendunt scientiam de scientia que fit virtute verborum de qua loquitur Innocentius magnus in Summa, di(stinctio) p(ri)ma, tractatus duodecimus? Ita dicit: 'Constat quod verba sacra in rebus naturalibus multam habent efficaciam. In tribus enim dicunt fisici precipue vim nature esse constitutam, scilicet in verbis, herbis et lapidibus. De virtute autem herbarum et lapidum aliquid scimus, set de virtute verborum nichil vel parum novimus. <45> Hanc autem verborum artem Sal*om*on habuisse dicitur que nunc penitus omnibus est incognita. Sicud enim aliqua herba aliquem in corpore humano habet effectum et alia in alio,[iii] ita sonus elementi naturaliter creditur habere

i matesis] *add. sup. lin*. id est mathematica consensus cum astrologia.
ii Pseudo-Ovid, *De vetula*, I, 714–8 (ed. Robathan, p. 75): Sed mathesis vix inveniet que iam velit ipsam, / Omnes declinant ad eas que lucra ministrat. / Utque sciant discunt pauci, plures ut abundent. /Sic te prostituunt, O virgo scientia, sic te / Venalem faciunt castis amplexibus aptam, /Non te propter te querentes, sed lucra per te.'
iii alio] *add.* ad aliquid agendum *sed del.*

aliquem effectum ad aliquid agendum circa rem aliquam et alius circa aliam. Et sicud diverse herbe simul coniuncte habent aliquam virtutem in medicina quam nulla per se haberet, ita plura elementa vel plures elementorum voces in rebus aliquem si simul coniuncte fuerint habentes effectum quem prolate singulariter non haberent. Set non est homo qui elementorum sciat virtutem vel artem coniungendi verba. <46> Per hanc autem artem Salomon exorcismos invenit in quibus artando demones, eos in vitreis vasis inclusit, et multa alia mirabilia in rebus naturalibus per exorcismos fecit. Per hanc etiam artem magi Pharaonis ex virgis creduntur fecisse dracones secundum naturam artis, et etiam occulta semina ipsis virgis insita, quorum ipsi noverunt naturam, et ex illis seminibus producendi demones artem habuerunt'.[i] Hec ille. <47> Si igitur[ii] verba habent huiusmodi virtutem in rebus naturalibus, quare astra et corpora celestia non haberent etc.?[iii]

<48> (fol. 74v) Postulata a domino etc …

i This passage (except for the last two phrases beginning 'et etiam occulta...') comes from Thomas of Cobham's popular *Summa confessionum* (ca. 1216 A.D.), Distinctio quinta, questio septima, ed. F, Broomfield, Louvain and Paris, 1968, pp. 478–9. Attributions to popes Innocent II, Innocent III and Innocent IV are found (Broomfield, p. xxvi). It is discussed in Beatrice Delaurenti, *La puissance des mots "Virtus verborum"*, Paris, 2007, pp. 27–32.

ii Si igitur] *add.* scientia verborum virtute est huiusmodi et ubi *sed del.*

iii non haberent etc.] *add. marg.* Ista sunt quasi aulula hic adducta; iam ad librum p*rimum* accedendum.' *et* '*Num*quid v*erbum* non habet virtutem quod sepe verbum ter dictum te commovet, te turbat, te in iram et furorem excit*at*, ad bella, ad pugnas, ad amorem, ad odium trahit, quanto te astra et celum mov*et*, quod te tum et circumdat et circumdant'.

**Translation**

<Preamble>

<1> In the year of the Lord 1454: this is the Preamble to the lectures on Alcabitius which master Johannes Borotin gave and began on the Tuesday before the day of Saint Sophia.

<2> In the name of God, Amen, by whose assent speech acquires grace, by whose grace the intellect receives wisdom, and the human soul, discipline, let us take up this work which we intend to lecture on – i.e., the doctrine of the wise Alkabitius on the judgements of the stars; let us now proceed in such a way through this introduction of his that we pour it into the hearts of our auditors who wish to study it, with God's help. <3> For I had before now begun to lecture on his doctrine for the usefulness of auditors and for my own exercise, but because intervening events brought about delay I have kept on postponing the lecturing. But now, as I turn things over in my mind carefully, I have understood that the office with the name of 'teaching' which I, though unworthy, have accepted urges me to distribute to others the treasury of learning that I have received, because I received an open book and not a closed one in my teaching position. Thus, what I had begun on Alcabitius as a teacher (?), I have entered upon to resume it, under God's leadership. <4> For the wise man says: 'A hidden treasure and wisdom not passed on to others: what usefulness is there in either of them?' As if he said: 'Lest perhaps I am found guilty of <hiding the> talent which that servant received and buried in the earth, not making any profit from it, for which he was accused by his lord', as is written in Matthew. <5> For a teacher, from his office of teaching is obliged to teacher others. Because of this, when one accepts

the teaching position, one comes to the Chair, and one is given an open book, not a closed one, so that now, as a teacher one teaches from the Chair. He is pleased to do this because, by being useful, he benefits <his students>. <6> Boethius says the same in his *Consolation of Philosophy*: 'For there is nothing which inclines me more to the office of teaching than usefulness'. <7> Therefore, so that I should worthily and usefully pour this science of the stars into your hearts, I will chose something from my youth, as long as I increase…(?). Thus may God, being present for this work by the divinity of his grace help me and make me complete what will be useful. It follows, then, that a prosperous light is shown to tongues <and> souls, which is favoured (?). <8> Look back <in the manuscript> for the introduction to Alkabitius which begins 'The glorious and sublime God'.

<The Introductory Lecture>

<9> The glorious and sublime God, who created all things by <His> word, and who most wisely placed the earth in the middle of the heavens, so that the celestial bodies might impress on it the effects of their powers which they had received from their Creator, wonderfully made the earth itself like a receptacle for the celestial powers. <10> But that the Lord makes the unstable and failing impressions on the mundane things of this world which He placed under the lunar globe, stable and perpetual through the superior bodies, which from the Moon upwards are designated with the name of 'heavens', he alone denies who, being stubborn of mind, or hidebound by the softness of carnal life, neither considers nor observes the actions of the heavenly bodies and the

passions of the lower bodies. <11> Knowledge about these effects is sought out by the astrologer in a most subtle and wonderful way. When they desire to see, or rather to know this, our Alcabitius <is> like their guide and greatest helper, for those wanting to go in, the door to be opened, and <the subject> to be introduced gently. Before we come to its door <we should proceed> with a most approving introduction and … understanding of those things that constitute the science of the stars, of which this present book is the beginning.

<12> One should know that the supreme lord of things, God, founded the nature of the entire mundane creature in a wonderful and astonishing way, so that in the contemplation of celestial and terrestial things the human mind should not rest, but by speculating on the mass, position and order of the four elements, on how the bulk of the earth is suspended in the middle of the world like a centre in a circle, how the seas and rivers are placed encircling the earth, how the greatness of the air and fire encircle them, and the very many other wonderful things, which I pass over so quickly, in order that it may ascend to the incorruptible part, since nothing delights <human> spirits more, nothing raises the mind to divine things more, than to contemplate the great beauty of the heavens, or the vibrating dancing of the stars, through which the machine of this world is ruled under God, subject to the power of the celestial army, which with the swiftest but noiseless course, by its diversity of motions, and a certain mobility without tiredness, presents for ever its bride (?) as a perpetual spectacle for the exercise of the human mind. <13> Nothing here is better than this spectacle, nothing more marvellous, nothing more beautiful. For what in the world is more remarkable than the brightness of the Sun,

illuminating the world? What is more wonderful than the various and diverse progress of the planets, or the multiple defects of the body of the Sun and Moon? And what is more terrible than the continued sad eclipses of the luminaries, which even wild animals, when they observe them, are afraid of and they hide in caves? <14> Therefore, nature first made men energetic, tall and straight, so that, by observing the congregation of the gods – i.e., the heavens of the stars – they might be able to grasp that there is one God (?). Hence, he says, so that you should know that nature wished that we should look at celestial things, it placed us in its middle part and only raised man above beasts so that he might be able to follow the stars as they flowed from their rising to their setting, and turn his face round to them. It made his head uplifted, and placed it on a flexible neck,<15> so that he might see the roundness of the heavenly applause: with how wonderful swiftness each turning around is moved; how it appears that the yearly changes are renovated by peretual movements, and how the Creator himself of the heavens, God, from the diverse movement of the heavens now permits hunger, now pestilent plague, now horrible wars, now floods, now rebellions etc. to be brought about in this inferior world. Therefore, as a help for avoiding ills He thought it worthy to reveal astronomy to men.

<16> This science was first revealed to Noah the prophet after the flood, as can be understood from the words of the Ancients. Hence, Ovid in the third book of the *De vetula*, speaking about the stars, says: 'That venerable prophet Noah first wrote these things down, and Shem, his first-begotten son, taught them.' But we do not doubt that before the flood many people had the science, such as Abel son of Adam, as St Thomas

says in his book on *Being and Essence*, where he says: 'I saw a certain most ancient book composed by Abel son of Adam, whom Cain killed, of a wonderful nature and effect'. <17> But Noah taught it to the Chaldeans, as Albumasar says in his *Introduction*. From the Chaldeans it reached the Indians, then the Egyptians; from the Egyptians it came to the Persians, then to the Romans and Greeks, then to the Chinese, afterwards to the Saracens, and finally to us, and thus now it has encompassed the whole earth. <18> In order to show astronomy better it should be noted that astronomy is described by Guido <Bonatti> in this way: 'It is an art which considers the courses of the stars and conditions of the planets between themselves and around the earth'. <19> From this it is gathered that there are two parts of astronomy, the first is concerning the orbs and the stars considered in themselves, and this is properly called astronomy, meaning 'the law of the stars'; and it can be described in this way: 'Astronomy is the law of the stars, which considers their courses, shapes, sizes and relations among themselves and around the earth with enquiring reason'. <20> But astrology is the science through which the changes and actions happening in things which are around us can be known. Because, as Ptolemy in the *Centiloquium* says, 'the faces of this world are subject to the faces of the higher things', <21> and Haly explaining the same passage, says these words: 'Ptolemy calls "the faces of this world" the species of animals and plants etc. and (says) that there are similar faces to all these faces or species in heaven. For example, the celestial scorpion dominates over earthly scorpions, the celestial serpent, terrestial serpents' etc, and he introduces a beautiful example. <22> And Plato in his *Timaeus* says: 'This sensible world is made in the likeness of the archetype'. And the Philosopher in the first book of the *Meteora* says: 'This world touches the movements of the higher bodies so that the whole

of its power is governed from there', or this: 'Astrology is the science which observes the effects, changes and actions of the celestial bodies on these lower bodies, and, because the effects of things follow their movements and positions, the astrologer has to take from the astronomer the teaching by which he may know the movements and positions of the celestial bodies, in respect to the earth, in which they come to be, and hence he can give a certain judgement concerning the effects. <23> Likewise, there is a difference between astronomy and astrology, because the former considers only the movements, shapes and sizes of both the orbs and the stars, the latter considers the effects arising from there; often, however, one is taken for the other. <24> Thus Albumasar divides that science in his *Great Introduction*, saying: 'There are two species: one is the science of the whole, i.e., the science concerning the circles and their movements, the second is the art of the judgements of astronomy'. <25> Ptolemy also makes this division in the preface to his *Quadripartitum*, and Haly in the commentary on this passage. <26> The first species is handed down perfectly and complete as far as principles, conclusions and demonstrations, completely and in a most refined way by Ptolemy in his *Almagest*, but in a narrative way, by Alfraganus, Albattani through the ascension (?) of the universal sphere etc. of which there are three parts. The first is on the figures, numbers, orders, quantities, and ratios of the heavenly bodies. The second part is about their movements and about those things which happen to the stars from the difference of their positions as a result of their movements, such as conjunctions, eclipses, quadratures, elevation, depression, swiftness, slowness etc. The third is on the difference of days, climes and nights, according to each region and this is handed down similarly through the aforesaid ascensions (?). <27> 'The second species, i.e., the art of judgements, which is what astrology is

about, has four principal parts, of which the first is on interrogations, the second on nativities, the third on revolutions of years, and this is two-part, i.e., the revolution of the years of the world and the revolution of the years of the nativities. <28> On these four parts Haly Abenragel has made a complete book; Ptolemy, however, in his *Quadripartitum* has omitted two parts, i.e., interrogations and elections. <29> As well as these parts there are certain other parts of judgements, i.e., about great conjunctions, about talismans, about sigils etc. about which we have little or nothing', from all of which wonderful and stupendous effects are found to come into being under the Moon. 'Because of this certain philosophers and ancient astrologers have posited that the celestial bodies are animate and rational, because they saw their effects were as if rational in respect to these inferior things. Because of this they made them gods and worshipped them. For they saw that through them good and evil fortune were brought about on earth'. <30> Hence St Thomas in the same place where he speaks about that material in his book *About Being and Essence*, says: 'But, however wonderful and stupendous effects the celestial bodies possess, they do not because of this have souls. But they have an intelligence moving and ruling them. It is not, however, their form, because they have another form through which they have their being with matter'. <31> He adds against those who claim that this art is vain and erroneous: 'However much I believe this through reason and faith, nevertheless this practical application had a great effect on me, when I saw a certain very old book of a wonderful nature and effect, composed by Abel, the son of Adam whom Cain killed, who, foreseeing the Flood, found a stone, broke it open, and hid the book of talismans in it. In this book he gives the names of the intelligences ruling the planets, and he posits seven intelligences and the name of the intelligence moving the

first heaven. These names are of such great efficacy that if you <make> the talisman according the different planets being in different signs and under different decans, and write on the talisman the name of the planet under which the image was made, and the name of the action for which the talisman is made, you will obtain your desire in everything. For there he teaches how to make a talisman, with which, if you touch any metal, it will become gold. There also he teaches how to make talismans for virtually every good and bad fortune. <32> I have not tested all of these,' says St Thomas, 'but only one: when a large herd of horses passed by every morning on the way to their watering place, not allowing me to sleep, and annoyed me every day, I made a talisman of a horse according to the instructions there, and I buried it in that path, with the result that no horse was able to pass. When it arrived at the place where the talisman was, it could not pass through the place, however much it was goaded etc, and it changed its course. Because of this I learnt by experience that these things were true. <33> Someone also told me that a talisman had been made of tin, according to the instructions in this book, when the Moon was in the second decan of Aquarius, and he wrote the name of the lord – or intelligence – of the Moon, and he did what was necessary, according to what was instructed there, and, wanting to make fun of the young women of a certain town, he put this talisman in the water of a well, and all their waterskins and vessels broke when they touched the water. <34> There are also there certain talismans from which knowledge is increased from a kind of irradiation of that intelligence under which someone becomes wise'. Consequently certain people claim that the supercelestial bodies do not have these stupendous and wonderful influences from their forms, but rather from the intelligences ruling over them, which St Thomas says as above. <35> Therefore, these actions also become

marvellous effects by virtue of the celestial bodies on these lower things, as is most clearly proved by the testimony of very many wise men, both Christian and pagan. <36> It is established that astrology, which concerns those effects which can be discovered through human art, is a true – indeed most true – science, although some people, mixing many superstitious things with it, say that it is completely false and erroneous, and thus is not an art but an error, and a superstion prohibited by the church, because, as such, it is a species of the mathematics which takes its name from Mathesis, daughter of Tyresias, with a long middle syllable, who is said to have first discovered divination, but inasfar as it is a true art, then it is a species of the true mathematical science, which takes its name from 'mathesis' which is 'science'. The latter is what we mean here. Hence this: '"matesis" gives rise to knowing, but "matesis" allows divination (?)', and this is in the book on Daniel. <36> Ptolemy also confirms this science on judgements in his *Quadripartitum*, and Albumasar in his *Great Introduction*; both of them, in confirming judgements, begin from the operation of the Sun. <37> Hence Ptolemy in the thirteenth proposition of the first part <of the Quadripartitum> says that the Sun with the air operates on all things existing on earth. And Haly, explaining this, says: 'Ptolemy wishes to show us that the fiery sphere and the sphere of air, which are changed by the celestial bodies, change all things which are among us'. <38> Likewise, Haly in the commentary on the twentieth proposition says that 'the roots of this science are so obvious that many ignorant people know and understand them by observing them'; and Ptolemy says that the common people know things before they happen and what is more, says: 'Mute animals know things before they happen'. <39> And Albumasar, against those denying the judgements of stars, whom he divides into ten sects, argues

with many obvious arguments, destroyng their oppositions, which it would take a long time to explain. <40> From all this it follows that this science, since it is a true science, is not erroneous in that it is against faith, just as very many ignorant and simple people attempt to assert – those who, as far as they can, hurry not only to deny every science of the world, but also to tear it out by the roots, so that, by throwing out all the wisemen and philsophising men, in their ignorant folly, they remain more willingly without criticism. To those people one should say: 'Do not become like a horse and a mule', because now not 'philosophia' but 'philopecunia' reigns. For now they wish to become rich rather than to philosophise. <41> Once the priests in Egypt, when they had acquired what was necessary, began to philosophise for the sake of the soul, but now not only do they not philosophise, but if anyone is philosophising they hate them and despise them, because now not 'philosophia' but 'philopecunia' reigns. Therefore, they wish to become rich rather than to philosophise. <42> 'In this way they prostitute you, O virgin science! In this way they put you on sale, though you are suited to chaste embraces, not seeking you for yourself, but seeking profit through you'. But now he will hardly find mathesis who now wants here, because 'all debase themselves to the level of those things which provide gain, and few learn things in order to know, but more so that they might become rich'.

<43> Do not <act> like this, lest you become similar to these people, but, considering this science to be true and right, love it and hurry with all your strength to get to know it. The information of its principles in this book of Alcabitius which introduces us to it is sufficiently solid. Whoever understands the doctrine of this book well, will be able to understand all

the books of judgements very clearly by reading them himself. It begins 'Postulata a domino…'

<44> But what should those who criticise this science say about the science which occurs by means of words? About this Innocent the Great speaks in the *Summa*, in the twelfth treatise of the first distinction. He speaks in this way: 'It is clear that sacred words have much efficacy over natural things. For physicists say that the natural force resides in three things: words, plants and stones. About the power of plants and stones we know something; about the power of words we know virtually nothing. <45> Solomon is said to have possessed this art of words, which is now completely unknown to all people. For just as one plant has an effect on one human body, and another on another, so the sound of a letter is believed to have, naturally, the effect of producing one action in one thing, and another <sound>, another. And just as different plants mixed together have a power in medicine which they do not have individually, so, if many letters or many words consisting of letters are combined, they have an effect on things which, when they are pronounced singularly, they do not have. But no one knows the power of letters or the art of joining together words. <46> Solomon invented exorcisms by which he bound demons and enclosed them in glass vessels and performed many other wonders on natural objects, through exorcisms. Through this art, also, the magicians of Pharaoh are believed to have made dragons from rods, according to the nature of the art, and the hidden seeds embedded within the rods themselves, whose nature they knew, and from these seeds they had the art of producing demons'.

<47> If, therefore, words have this kind of power over natural things, why should not the stars and celestial bodies not have <this power>?[i]

<48> (The first lemma from Alcabitius's text).

i Added in the lower margin: 'Surely a word has power, because often a word spoken three times moves you, disturbs you, arouses you into anger and furor, and excites you to wars, battles, love and hate, by as much the stars and the heavens move you, because it and they surround you.'