Transcription, Translation, and Annotation: Observations on Three Medieval Islamicate Medical Texts in UPenn MS Codex 1649

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Abstract
Provides an introduction to previously unpublished and incomplete copies of three Arabic medical tracts translated in Judeo-Arabic: al-Mughnīfī Tadbīr al-Amrāḍ (“The Sufficient for the Management of Illnesses”) by Sa‘īd ibn Hibat Allah (fols. 15-18, 40-52, 211-307), al-Adwiya al-Qalbiyya (“Cardiac Drugs”) by Abū ‘Alī Ibn Sinā (fols. 25-39), and al- KāmilfīṢīnā’at al-Ṭibb (“The Complete [Book] in the Art of Medicine”), also known as al- Mālikī (“The Royal [Book]”) by Abū al-‘Abbās al-Majūsī (fols. 53-210). The copies, compiled by a Jewish physician identified as David ben Shalom, were produced in Sicily in the fifteenth century in Sicily and provide a unique witness to the cross-fertilization of scientific thought in the late Middle Ages.

Keywords
Arabic manuscripts, history of science, history of medicine, Abū ‘Alī Ibn Sinā (Avicenna), Sa‘īd ibn Hibat Allah, Abū al-‘Abbās al-Majūsī (Haly Abbas), UPenn MS Codex 1649, translation, Judeo-Arabic, textual transmission, manuscript studies, material text

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University of Pennsylvania Libraries’ MS Codex 1649, a fifteenth-century Sicilian medical miscellany in Judeo-Arabic, Hebrew, and Arabic compiled by a Jewish physician identified as David ben Shalom, contains incomplete texts of three medical texts, all of them written in Arabic by authors working in Baghdad or points eastward in the tenth and eleventh centuries: al-Mughni fi Tadbîr al-Amrâd (“The Sufficient for the Management of Illnesses”) by Sa’id ibn Hibat Allah (fol. 15–18, 40–52, 211–307), al-Adwiya al-Qalbiyya (“Cardiac Drugs”) by Abû ‘Alî Ibn Sinâ (fol. 25–39), and al-Kâmîl fi Šinâ’at al-Ṭibb (“The Complete [Book] in the Art of Medicine”), also known as al-Mâlikî (“The Royal [Book]”) by Abû al-‘Abbâs al-Majûsî (fol. 53–210).1 The first is unknown to academic scholarship, beyond some useful information recorded in manuscript catalogues

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1 This material was first presented as the first Herbert D. Katz Center Fellowship in Jewish Manuscript Studies and the David B. Ruderman Distinguished Fellowship Lecture, “Tales of Three Texts: The Judaeo-Arabic and Hebrew Medical Texts in UPenn MS Codex 1649,” held at the University of Pennsylvania Libraries on 3 September 2015. The slides were posted to Academia.edu and made available for comments. For a link to the discussion, see https://www.academia.edu/s/8303616c34. For a description of UPenn MS Codex 1649, see the entry in the Penn Libraries’ digital catalog Penn in Hand: http://dla.library.upenn.edu/dla/medren/record.html?q=judeo%20arabic&id=MEDREN_63001008.
and bibliographies. The author of the second, better known as Avicenna, is justly one of the most famous philosopher-scientists of the medieval period, but his small monograph on “cardiac drugs” has not attracted much attention. The third text formed the basis of one of the most important Latin medical texts, the Pantegni of Constantine the African. This author’s Latinized name, Haly Abbas, can be found in many books and articles on medieval science.

All three tracts are written in Hebrew characters in UPenn MS Codex 1649; the first and third preserve the Arabic language but transcribe the texts in Hebrew characters. There are in fact many exemplars of this sort of transcription, especially of medical texts. The second tract, Avicenna’s treatise on drugs for the heart, is in a Hebrew translation, however. In fact, it is a Hebrew translation made not from the original, but from a Latin translation of the Arabic.

Other materials are bound together with these texts in the codex, but

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6 Examples of other Arabic-to-Latin-to-Hebrew translations of medical texts are some writings of Abū Bakr al-Rāzī (865–925): sections of al-Manṣūrī, cautiously described by Steinschneider, pp. 726–27, and his monograph on pediatrics, which is extant in three different Hebrew versions, all deriving from the Latin, and recently published by Gerrit Bos and Michael McVaugh, Al-Rāzī, on the Treatment of Small Children (De curis puerorum): The Latin and Hebrew Translations (Leiden: Brill, 2015).
they have no connection to the medical texts mentioned above. It is not uncommon for loose pages or even entire quires to be bound together with other texts to which they are not related, to keep them from getting lost. Moreover, as can be seen in the images posted online, some pages, from a different manuscript in the Arabic alphabet, have been used in the binding. While these materials are significant, the focus in the present study is to briefly introduce each of the three texts since they have received scant treatment in the English language. Then, I will focus on one or two features unique to UPenn MS Codex 1649. Indeed, each manuscript of a text will have a story of its own to tell, regarding the readership and transmission. In those regards, Codex 1649 is particularly rich.

1. Al-Mughnī fī Tadbīr al-Amrād

The first text, Ibn Hibat Allah’s al-Mughnī, was designed as a very practical handbook for physicians. In an elaborated translation, the title, which I have translated as “The Sufficient,” would be “that which is sufficient for the user, so that nothing else is needed.” In other words, the physician could go about his profession using this book alone with no other resource needed. Indeed, in not a few manuscripts (but not UPenn MS Codex 1649), the entries are exhibited in tabular form, for ease of reference. Like most pathologies, the entries cover the body beginning with the head and moving down to the feet. At the end there are also entries on ailments that affect the entire body, such as battle wounds, animal bites, and poisons.

Each entry has four sections: (1) the name and description of the ailment, (2) an etiology, (3) symptom(s), and (4) recommended treatments. The first three are very brief; the great bulk of the entry is taken up by the fourth section, as one would expect in a practical handbook. Figure 1 shows the entry on pneumonia in UPenn MS Codex 1649; each of the four sections is labeled in majuscule: (1) אלמרץ׳, the ailment, (2) אלסבב, the etiology, (3) אלערץ׳, the symptom, (4) אלתדביר, the treatment or management. Of interest in this folio is the appearance in the left margin of a word written in Latin, repelimonea (fig. 2). This is not the only Latin word written in the margins of this codex. We will see shortly that someone, writing in exactly
the same hand, copied into the margin a word from the Latin translation of Avicenna’s *Cardiac Drugs*. However, in that case the word was copied directly out of the Latin translation of Avicenna; but for *al-Mughnī* there is no known Latin translation. Moreover, *repelimonea* does not make sense in any language that I know. Two solutions to this conundrum may be proposed. The first is that the first two letters, *pe-* , were cut or torn off the margin. The word begins right at the edge of the page, so this is a possibility. Then we would have “(pe)repelimonea.” This would not be an emendation (a correction, based on the assumption that the glossator made a mistake while writing the word), but a reconstruction (an assumption that a part of the margin has fallen off). *Perepelimonea* thus looks to be a reasonable spelling of the Latin term for pneumonia.

Through personal communication, Gerrit Bos has proposed a different solution. The glossator of course did not consult a Latin text, but rather came up with a word that is a literal rendering of the Arabic name for pneumonia, *dhāt al-ri’a*, literally “the thing appertaining to the lung.” The Latin *res, ret* (with a stem “re”) is a fairly good equivalent to *dhāt*, and *pelimonea* may reflect whatever Sicilian-Spanish pronunciation the annotator heard.

**Figure 1.** Entry on “pneumonia,” from Ibn Hibat Allah’s *al-Mughnī fī Tadbīr al-Amrād*. University of Pennsylvania Libraries MS Codex 1649, fol. 238r.
(Many words are recorded in manuscripts as they were pronounced: in modern Spanish pulmón is the word for lung, in Italian it is polmone).

Al-Mughni is the only text in the manuscript for which we have the end of the text and a colophon. The colophon provides both the name of the scribe, David ben Shalom, and a date for the copying which is, however, problematic (fig. 3). The year (anno mundi, as reckoned in the Jewish tradition) is indicated by a chronogram: a string of letters whose alphanumeric value adds up to the year in which the text was copied. In Hebrew, and so also in Arabic, Greek, and other languages, each letter has a numerical value, and letters of the alphabet as well as numerals can be used to indicate numbers. Jewish copyists strove to find a biblical citation that could be used to indicate the year. In UPenn MS Codex 1649 David has chosen two words from Genesis 27:19, ואכלה מצידי. However, he did not need all of those letters; he only used the ones marked by dots. The date given is therefore the thirteenth of Kislev, and, to complicate matters, David has also given the weekday, “the third day” or Tuesday.

The problem arises when adding up the letters to get the year, and then having the thirteenth of Kislev fall on a Tuesday. The solution I propose is the following: count only the alphanumeric values of those letters marked

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7 I thank Nadia Vidro for first alerting me, in a comment from the Academia.edu discussion (see n. 1), to the problematic nature of the chronogram.
by two dots. This means not counting the first two letters in the citation, nor the heb (נ), which is marked by ten dots and should refer to the millennium (5000). This yields 13 Kislev 5204, which is Wednesday, 15 November 1443. I suggest that the copying was completed on Tuesday night, 14 November 1443. The copyist knew that the Hebrew calendar date had advanced already, from 12 to 13 Kislev, but forgot that the Hebrew weekday also advanced. This would be the equivalent of someone saying that now, at the time of writing in September 2015, Yom Kippur began on a Tuesday night, which I think is what most people would say. According to the Hebrew calendar, however, not only does the date move after sunset to 10

Figure 3. Detail of colophon to Ibn Hibat Allah’s al-Mughni fi Tadbir al-Amrād. UPenn MS Codex 1649, fol.17v.
Strictly speaking, Yom Kippur begins in 2015 on Wednesday, but our habit of speaking has us refer to the weekday as Tuesday. I suggest that a similar habit caused David to refer to the weekday as Tuesday.

David’s hand is Spanish or Sephardic, which is not surprising as Sicily was then politically and, in a good measure, culturally part of Aragon; only some four hundred years later would it become a part of Italy. Its style matches that of other manuscripts written in a Sephardic hand in the middle or late fifteenth century. There is indeed reason to suspect that David came to Sicily not long before, fleeing the ever-growing persecution of Jews in the Iberian kingdoms. I base my hypothesis upon the unusual and passionate prayer for messianic redemption that he puts at the end of the colophon. A translation of the essential parts (the information about the execution of the copy, and the prayer for redemption) reads:

The book that is called al-Mughnī, ... the composition of the Sheikh and philosopher, Abū al-Ḥasan Sa'd bin Hibat Allāh, the physician, ... David ben R. Shalom wrote it in his own hand. It was finished on Tuesday, the 13th of Kislev, in the year [5204 AM = 1443 CE] in Catania.

I ask God to send forth to us our messiah; and that He liberate us from the nations, and repay us, and lead us up to His holy homeland, Amen!

2. *Al-Adwiya al-Qalbiyya*

Next in order is the text on *Cardiac Drugs* by Abū ‘Alī Ibn Sinā (980–1038), also known as Avicenna. He is by far the most famous of the three authors whose work is under scrutiny here. His “Canon of Medicine” is the most influential text in medicine between the time of Galen and the early mod-

ern period. Surprisingly, his short monograph on “Cardiac Drugs” is hardly known at all, even to specialists in the medieval period.

More than any other of the three texts that make up this codex, Avicenna’s *Cardiac Drugs* stimulated owners of the manuscript to jot notes in the margins or make corrections between lines; this is an excellent indication of the interest they had in this book. I say “owners,” in the plural, because the notes are in somewhat different handwritings, and, hence, written by different individuals; and I call them “owners” on the assumption that only someone who owned the book would mark it up in this way.

The first piece of this treatise in UPenn MS Codex 1649 is found on fol. 25r. About three-quarters of the way down on the page is written in large letters: “Chapter Nine.” The text corresponds to chapter ten in the more recent edition of the Arabic text, but to chapter nine in the Latin translation. In the Hebrew translation found in Bayerische Staatsbibliothek, MS 280, fol. 116v, which was made directly from the Arabic, this same chapter is also numbered as the ninth. Steinschneider has noted, however, that the redaction in this copy deviates somewhat. The copy in UPenn MS Codex 1649 is indeed a Hebrew translation from the Latin, version listed and described briefly by Steinschneider. There are many other discrepancies between the original and translation; these may be due to different versions of the book that Avicenna himself released to the public, or to various “hic-cups” in the transmission.

*Cardiac Drugs* does not deal with the modern science of cardiology; that specialty of the medical profession simply did not exist in the medieval period. Rather than dealing with muscles and cardiovascular systems,
it instead focuses on the heart as the locus of the vital spirit or *pneuma*, which, among other things, controls our emotions according to the Galenic system. Sadness and depression may be due to some material deficiency in this spirit. In the ninth chapter, Avicenna describes various remedies that will exhilarate, or gladden the heart, describing how each type of remedy works (in terms of medieval physiology and psychology, of course). Following that, he names some substances that will achieve this effect, informing us as well to which category of remedy they belong. Some gladden the heart by “feeding” the spirit—that is, reinforcing it materially; most outstanding in this regard is wine. Other substances do this by literally illuminating the spirit, as do pearls; myrobalan, one of the most important fruits in the Indian pharmacopoeia and often recommended in medieval Arabic texts, prevents its dissolution. The list goes on. The final entry is called in Arabic *khāṣṣiyya*, Hebrew *segulah*, literally “a special (or specific) property.” These are substances that are observed to have a certain effect, but the science of the day, based mainly on Aristotelian notions of matter, form, and qualities, could not explain why they were effective. These are then special or occult properties (Arabic *khāṣṣa*, Hebrew *segulah*). Medieval scientists insisted that basically the same causality is at work as it is with drugs whose properties they understood (such as pepper, for example, which works by heating); but they admitted that they could not pinpoint the reason why they worked. Sometimes, though, there is some clue as to why these substances work; in that case their action is ascribed to a combination of special and recognized causes.

Lines 5–8 and the beginning of line 9 on fol. 26v provide an illustration of Ibn Sina’s presentation of some examples. These lines show some notes in the margin as well as between the lines of text, which are very interesting. We should pay attention here to differences between the Hebrew and the Arabic, as well as some marginalia and interlinear corrections.

The Arabic reads in translation:

The special property is sometimes linked to one of the causes that have been mentioned. Examples are musk and ambergris. Both of them exhilarate by means of a special property, together with a cause that is linked to both of them, namely an aroma
that nourishes the spirit. Apple rob is also an example [of this]. It exhilarates by means of a special property. However, should the temperament of the spirit be very hot, then it exhilarates by means of a known cause, namely cooling, along with the special, occult property.

The first thing to point out is the Hebrew word for *ambergris*. It usually appears as ענבר, which is a homonym for the Arabic ‘anbar. In the manuscript, however, we find עבמר (I ignore the first letter, ה, which is the definite article). Someone—possibly the scribe who first copied the book and then checked his work, or some later owner—noticed the error and corrected it by placing dots over the two letters whose positions have been switched: two dots over the מ, indicating that it should be second, and one dot over the ע, to show that it should come first.

Notice also the spelling of this word. I said earlier that the Hebrew word is usually ‘inbar; but here it is ‘imbar. This spelling appears to reflect the influence of the Latin, which fol. 329aa exhibits as *ambra*. The marginalia on this folio are very also unusual, appearing in two different languages and two different scripts (fig. 5).

Their purpose must be to explain, or gloss, a word in the Hebrew text. On the face of it—or at least to those of us with access to the Arabic original—there is no call for a comment. The notes apply to the phrase, “namely an aroma that nourishes the spirit.” The Hebrew *zanah* (it should
be *ba-zanah*) is an accurate translation of the Arabic *al-ghādhiyya*, meaning “nourishing.” However, someone has copied out the Latin *refocillanti*, and someone else, perhaps the same writer, has written below it in Arabic but in Hebrew letters: *ya’niy tunā’ish wa-tuwāfiq wa-tuqāwiy*. The last three words are verbs with similar meanings that reinforce each other: “It means that it reinvigorates, and brings into harmony, and strengthens.” None of these words appear in the original Arabic; they clearly are not meant to clarify the Hebrew *zanah*; rather, they gloss the Latin *refocillo*, which means “to warm
into life again; to revive, revivify.”¹⁴ In other words, a reader of the Hebrew translation of an Arabic text from the Latin either had trouble understanding one word—a very common Hebrew word—or else closely compared the Hebrew with the Latin, and then came across an uncommon Latin word, which he jotted in the margin. In order to clarify the Latin, someone—perhaps the same person—explained it by means of three different words in Arabic, the language of the original book! (Experts in Arabic will notice that all three verbs appear here in the third conjugation, which is appropriate only for the second, tuwāfiq. I doubt that the writer of this note cared much about this. The reader will also notice an interlinear addition on the left side of the image. That records a form of the Hebrew verb “to be”; Hebrew, like other Semitic languages, uses non-verbal sentences where the Latin would have a form of the verb “to be.” I think that that is the reason for the interlinear correction. Finally, notice that the Hebrew translation, made from the Latin, translates the Arabic original literally and correctly; did the translator then have access to the text in Arabic?)

Why did this word cause so much trouble? I surmise that the readers—and before them, the translator into Latin—were puzzled by how an aroma or scent could nourish; “nourishment” is a process by which matter is transferred to the body, absorbed, and adapted to it; but is this true of aromas? Perhaps for this reason, the Latin chose refocillo, which the reader then glossed in Arabic, signaling to us that he was most comfortable in that language. Why, then, didn’t he read the book on cardiac drugs in the original? The probable answer is availability; there just may not have been copies of the Arabic text of Avicenna’s book, so our reader had no choice but to make do with a Hebrew translation, even though he would have been perfectly capable of reading it in the original.

3. Al-Kāmil fi Ṣinā‘at al-Ṭibb

The last in order—but the earliest in terms of its date of composition—is a sizable portion from Ali b. al-‘Abbās al-Majūsī’s comprehensive book al-Kāmil fi Ṣinā‘at al-Ṭibb. Al-Majūsī’s book had its greatest impact, I believe, in its Latin translations. For this reason, previous generations of scholars highlighted “Haly Abbas” (as he was known to the Latins) in their chapters on “Arabian medicine.” The al-Kāmil is recognized as one of the premier works in its field. In their recent survey, Peter E. Pormann and Emilie Savage-Smith list it as one of the three most influential compendia.15 However, in Islamicate civilization, al-Majūsī’s accomplishment was eclipsed, by and large, by Avicenna’s great Canon, al-Qānūn fī al-Ṭibb. Pormann and Savage-Smith go on to write that the Qānūn “rivalled, and in many quarters surpassed, the popularity of al-Majūsī’s compendium.” Judging not only by the manuscript copies and translations, but also—and most weightily—by the enormous satellite literature, comprising commentaries, abridgements, commentaries to abridgements, and more, I think that it was no contest at all: the Qānūn had far and away the greatest impact.

Al-Majūsī’s book in the original Arabic has attracted little attention from historians of science. The only major piece of research has appeared in the last few decades, a collection of essays edited by Charles Burnett and Danielle Jacquart, cited above. But only the first paper in that volume, by Francoise Micheau, is a study of al-Majūsī’s work in medicine.16 Other studies focus on Constantine the African, or else on the manuscript tradition of the Arabic original. Ron Barkai contributed a paper “The Judaeo-Arabic and Hebrew versions of the Kitāb Kāmil aṣ-ṣinā‘a.”17 (As a rule I distinguish between texts written by Jews, which I classify as Judaeo-Arabic, and transcriptions of texts written by non-Jews—Muslims, Greeks, and others—because, in my way of looking at things, they represent different cultural

17 Ullmann, Medieval Islamic Medicine, 57–70.
phenomena. Barkai indeed calls attention to the fact that the copyist of the Vatican manuscript states that he transcribed the text “from the Arabic into the Hebrew” (fa-ansakhtubu min al-‘arabī ilā al-‘ibrānī), then adds, “meaning, of course, Judaeo-Arabic.” But of course the scribe had never heard of Judaeo-Arabic, which is a modern academic convention, and he had in mind the alphabets, not the languages or dialects.)

Barkai’s survey is far from satisfactory, for a number of reasons, but I will limit my criticism to those specific points that bear upon the present study. Barkai discusses four manuscripts that contain portions of al-Kāmil: Vatican, Biblioteca Apostolica, Ebr. 358; Munich, Bayerische Staatsbibliothek, MS 104; Berlin, Staatsbibliothek Or. Quart. 513; and Sassoon 1040 (private collection). The online catalogue of the Institute of Microfilmed Hebrew Manuscripts in Jerusalem lists at least thirteen other copies or fragments of al-Kāmil, written in Arabic but transcribed into the Hebrew alphabet. Most are small fragments; close examination may reveal that two or more are pieces of the same manuscript that became separated. The copy in UPenn MS Codex 1649 is one of the more substantial exemplars.

Surprisingly, though, al-Majūsī’s book has hardly a presence at all in the Hebrew translation of the medieval period. The great bibliographer Moritz Steinschneider registered his amazement at this fact in his monumental Die hebraeischen Uebersetzungen des Mittelalters und die Juden als Dolmetscher (p. 669): “One must wonder if such a famous work was never translated into Hebrew.” He then adds, with some relief, “However, an anonymous fragment has recently been discovered, namely books two and three of the first part.” This manuscript has now been placed online by the Berlin Staatsbibliothek.

18 Ullmann, Medieval Islamic Medicine, 59. The transcription is my own; that given by Barkai in note 9 has some mistakes. The “nun” (נ) in ansakhtubu has been corrected by overwriting.
20 http://digital.staatsbibliothek-berlin.de/werkansicht/?PPN=PPN690165641&PHYSID=PHYS_0001&USE=800.
Al-Majūsī’s book is divided into two parts, the first part dealing with theory (meaning physiology, pathology, and the like), the second with practice (specific ailments, their symptoms and remedies). The thirty-fifth and final chapter of part II, book 8, which begins on fol. 209v of the codex, is noteworthy. It contains a waṣāyā, an ethical will, a bidding or admonition, and a mashūra, a piece of advice, to physicians “at the beginning of treatment when deciding upon a regimen for diseases.” It is a handy encapsulation of the basic therapeutic approach, drawn from the works of both ancients and moderns. A close examination of the chapter is far beyond the purview of this paper. However, there is an interesting feature peculiar to this codex that bears mentioning. The first piece of advice, taken from Hippocrates (of Cos, the “father of medicine,” if one may still use phrases like that), basically advises minimum intervention. The body will do its best to heal itself; the physician may be required to aid the body in its natural healing process, but too severe an intervention will do more harm than good.

Hippocrates has a very strong presence in Arabic medical literature, where his name usually appears in what looks be an Arabicized form, “Abūqrāṭ” (sometimes shortened to Būqrāṭ). However, in UPenn MS Codex 1649, seven lines up on fol. 209v, it is spelled יפשראות (fig. 6). I have never seen this spelling in an Arabic manuscript; I surmise that the copyist knew the Latin or some Romance vocalization, which he substituted for “Abūqrāṭ,” the name given in the printed text.21

To sum up, then, Codex 1649 preserves copies of some important medical texts that have not drawn very much attention. More than that, the marginalia in several languages, interlinear corrections, odd spellings, and other features that I have not had room to discuss here, are particularly interesting, and illustrate how each manuscript adds to our knowledge of the dissemination of knowledge.