

Latin-into-Hebrew: Texts and Studies

Volume One: Studies

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BRILL

LEIDEN · BOSTON
2013

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CHAPTER ONE

LATIN INTO HEBREW—TWICE OVER! PRESENTING LATIN SCHOLASTIC MEDICINE TO A JEWISH AUDIENCE

Susan Einbinder and Michael McVaugh

The medical masters of fourteenth-century Montpellier are distinguished by the quantity of medical writings they have left behind, especially those written in the first half of the century, which reached a wide readership, not just in Latin but in Hebrew: scholars have recently shown how the works of Bernard Gordon and Gerard of Solo very quickly received Hebrew translation¹—some, indeed, two or three times independently. Arnau de Vilanova is another Montpellier master whose works were rendered into Hebrew, though the translations have not yet been fully studied. The medico-philosophical works for which he is especially well known today apparently had little attraction for Jewish physicians, but Moritz Steinschneider long ago identified ten medieval Hebrew translations, generally of more practical Arnardian or pseudo-Arnardian treatises, in surviving manuscripts.²

In Arnau's case, to be sure, "translation" covers a variety of compositions. It includes virtually word-for-word Hebrew versions of the Latin, like the *Pirquei* made of his *Medicationis parabole*;³ a reworking of the Latin original incorporating material included by the translator, as apparently in the case of Isaac Caslari's translation of Arnau's *Regimen sanitatis* originally composed for Jaume II of Aragon (though Caslari's translation may have passed

¹ Lola Ferre, "Las traducciones hebreas de la obra médica de Bernard de Gordon," *Miscelánea de estudios árabes y hebráicos* 49 (2000): 191–206; Anne-Sylvie Guénoun, "Les traductions en hébreu de l'oeuvre du médecin Gérard de Solo (XIV^e siècle)," *Revue des études juives* 164 (2005): 463–488.

² Moritz Steinschneider, *Die Hebräischen Übersetzungen des Mittelalters und die Juden als Dolmetscher* (Berlin, 1893; reprint Graz: Akademische Druck- und Verlagsanstalt, 1956; hereafter: *HÜ*), pp. 778–785.

³ *Pirqué Arnau de Vilanova*, eds. Lola Ferre and Eduard Feliu, *Arnaldi de Villanova Opera Medica Omnia* (hereafter: *AVOMO*) VI.1 (Barcelona: Universitat de Barcelona, 1990).

through an intermediate Catalan version);⁴ and what begins as a translation of the *Tabula super vita brevis* condensed from Arnau's commentary on *Aphorisms* 1.1, but quickly turns into an independent work that in effect glosses the *Tabula* without ever quoting its language at any length.⁵ And one of the translations turned up by Steinschneider is far more unusual than any of these, the work which he identified as "Definitions" taken from Arnau's *Speculum medicine*.⁶

The original *Speculum medicine* is itself an unusual work. It is by far the longest medical treatise Arnau ever composed, running to nearly 90,000 words and 101 chapters in the edition of 1504; he finished it in Montpellier in 1308, in a period of relative personal calm. But though it is long, it is far from diffuse. It is structured tightly around the three main groups of explanatory entities from Galenic medical thought: the *res naturales* or naturals, the things that constitute the human body (the elements, the humors, the members, the spirits); the *res non naturales* or non-naturals, comprising things distinct from the physical body that condition its health (air, food, medicines, sleep, etc.); and the *res contra naturam* or contra-naturals, including diseases with their causes and symptoms. In the section on the non-naturals Arnau included an exceptionally long and careful account of the scientific basis for drug action, with a classification of forty-seven distinct medicinal properties into a hierarchy of six groups.

The Hebrew translation of this work—or more accurately, as we will see, of a few brief excerpts from it—seems to survive in only one copy, MS Lyon, Bibliothèque municipale 15, fols. 176^v–173^r. This peculiar foliation is due to the fact that the manuscript's pages have been numbered in the upper-right corner of each right-hand page in sequence *from the back*. We offer an edition below (Appendix, pp. 455–467), based on the digitized copy accessible (as of March 2013) at <http://www.e-corpus.org/notices/114169/gallery/>, where the work is contained in images 43–48.⁷ The same manuscript also contains a number of other Latin-Hebrew medical translations, including

⁴ See Arnau de Vilanova, *Regimen sanitatis ad regem Aragonum*, ed. Pedro Gil-Sotres et al., *AVOMO X.1* (Barcelona: Universitat de Barcelona, 1996), pp. 880–884.

⁵ Steinschneider, *HÜ*, p. 782; copies in MS Oxford, Bodl. Marsh. 347 (Neubauer 2133), fols. 157^r–197^v; and MS Florence, Laur. Or. 488, fols. 45^v–100^r.

⁶ Steinschneider, *HÜ*, p. 784.

⁷ Thus the plate accompanying this article (in its textual appendix, below, p. 468) illustrates image 43/fol. 176^v.

those of Arnau's *Regimen sanitatis* and a composition, based on Arnau's *Practica summaria*, that is often called the *Arnaldina*.⁸

Our text is written in two columns per page, in a hand that both Colette Sirat and Judith Schlanger have kindly examined for us and characterized as Provençal, a hand which evidently dates from the mid-fifteenth century.⁹ The surprise appears when we try to read the Hebrew words, for while the right-hand columns certainly contain intelligible Hebrew, the left-hand columns do not. They prove instead to contain a series of sentences in Latin transliterated in Hebrew characters,¹⁰ sentences which turn out to be based closely on the text of the *Speculum* and drawn in order from its successive chapters. The series begins with four sentences that quote virtually verbatim from the *Speculum*'s introduction and first chapter, and continues with ten sentences that define and explain most of the *res naturales* (two of them, *operationes* and *virtutes*, are omitted), again either quoting directly or fusing several Arnaldian passages into one. Then it jumps to Arnau's tabular presentation of medicinal properties, once more using his language to construct definitions for some thirty of the forty-seven he had described in the original text. And there it stops, saying nothing about the other non-naturals or about any of the contra-naturals. In all, the author of the transliterated Latin text in the left-hand column has selectively summarized the *Speculum* in fifty phrases or sentences comprising about four hundred words of the original—and these Latin sentences prove to be what has been translated into Hebrew in the right-hand columns! Our text is thus in fact *two* texts, both a transliteration and a translation of a single set of excerpts from Arnau's *Speculum*.

⁸ A full description is provided by Adolf Neubauer, "Rapport sur une mission dans l'est de la France, en Suisse et en Allemagne pour l'histoire littéraire des rabbins français," *Archives de missions scientifiques et littéraires*, series 3, vol. 1 (1873), pp. 565–566 (as MS Lyon "12"); this seems to have been the basis for the much shorter description in *Catalogue général des manuscrits des bibliothèques publiques de France: Départements—Lyon*, 30:1 (Paris: Plon, 1900), p. 4.

⁹ On fol. 117^v the colophon to a work Steinscheider was able to identify with the "parva chirurgia" of Guy de Chauliac names the scribe as Asher ben Moshe of Arles, and gives the date of writing as 1468 (*HÜ*, p. 803). The *Parva chirurgia* was in fact a Latin summary by a later author of Guy's great work, the *Chirurgia magna*, completed in 1363 (E. Nicaise, *La grande chirurgie de Guy de Chauliac* [Paris: Alcan, 1890], CIII–CIV). Hence a date of 1468 for a copy of a Hebrew translation of this summary is not unreasonable, and the hand of our text appears to be essentially identical with that of the *Parva chirurgia* translation.

¹⁰ Here and below we use the term "transliterated" loosely; as Cyril Aslanov shows in his article elsewhere in this volume (pp. 45–58), our text is a mixture of transliteration (representing one Latin character by a Hebrew one) and transcription (representing a Latin sound by a Hebrew character or characters).

The original title of that assemblage of Latin excerpts, as given in the transliteration, appears to have been “In definitionibus et aliquibus considerationibus extractis a Francisco Gersai”; the equivalent title in the translation is “Arnau on definitions and some considerations, by the sage Fransesc Geresai.” The text seems no longer to survive in any Latin manuscript—at least, it has not turned up in the course of a systematic search for manuscripts of all or part of the *Speculum* that one of us has carried out in preparation for an edition of that work. Its author, too, is unknown, but he may have been Catalan, for “Francesc” is the Catalan form of Franciscus (the normal Occitan form would be “Francés”), and his cognomen could have been Garcia, which was a not uncommon Catalan name in the later Middle Ages.¹¹ To be sure, it is not impossible that the name is not Catalan but Castilian. Arnau’s *Speculum* was being read closely at the University of Salamanca in 1433 (and no doubt before),¹² and the *Definitions* could have been extracted there by a Francisco García. Nevertheless, the fact that the Lyon manuscript is in a Provençal hand, and that many of the works it contains come from Montpellier, inclines us on balance to suppose that our Garcia was active in that general region rather than in Castile.

There are several puzzling features about Garcia’s Latin epitome of the *Speculum* (we should remind the reader once more that the left-hand text is indeed in Latin, even if written in Hebrew characters). His first few sentences quote the language of the *Speculum* directly. Thus the second sentence of the transliterated Latin repeats the opening of the *Speculum* word for word; again, sentence 11, a definition of “humor,” continues the close use of the *Speculum*’s words, including one which corresponds to an occasional variant in the Latin textual tradition (*generantur* rather than *causantur*). But other early sentences have clearly been thoughtfully reworked from separate phrases in the corresponding chapters of the original work. Consider the opening of the fourteenth sentence:

Membra differunt materia scilicet spermate et sanguine, secundo differunt dignitate...

This has been developed out of a much longer passage in Arnau’s original chapter on the bodily members:

¹¹ We are very grateful to Professor Lluís Cifuentes for having explored these issues for us with the Oficina d’Onomàstica of the Institut d’Estudis Catalans, Barcelona.

¹² Luis García-Ballester, *La búsqueda de la salud: Sanadores y enfermos en la España medieval* (Barcelona: Editorial Península [Historia, Ciencia, Sociedad, 321], 2001), p. 238.

Membrorum differentias medicus attendit in quattuor, scilicet in materia, dignitate vel officio, corpulentia, et complexione. In materia quoniam ea quorum possibilis est restauratio post deperditionem asserit ex sanguine tantummodo generari ut caro et pinguedo, cetera vero quia deperdita non restaurantur non tantum ex sanguine sed etiam ex spermate generari dicit.¹³

It is easy to see how Garcia has proceeded here, how he has drastically condensed Arnau's account of the members' differing generation out of either blood or sperm down to its essentials. Note too that he has introduced the two-fold differentiation by intelligently repositioning the word "scilicet" of the original. Here is another example of the epitomizer's facility with Latin. Arnau had written

Contractiva medicina ... sic nominatur pro tanto quoniam sua stipticitate constringit et aggregat partes membri usque ad inspissationem pororum et obturationem meatuum,

which Garcia condensed in sentence 44 to read

Contractiva est que constringit partes usque pori et meatus inspissantur

by converting "pores" and "members" from a subordinate role in the sentence to become the subject of the verb. This smoothness suggests to us that the summary was prepared and written out in Latin to begin with, even though no other trace of that text survives.

But an immediate puzzle is why anyone should have thought that these particular fifty sentences on narrowly restricted topics were worth singling out from a massively complicated work? Why would Francesc Garcia have decided to ignore the *Speculum's* accounts of *res non naturales* and *res contra naturam*? And, given that he evidently felt (for whatever reason) that the *res naturales* deserved special attention, why would he fail to pass on to his readers any information about two members of that group, *operationes* and *virtutes*? Why would he choose to enumerate the various bodily members and discuss in detail their qualitative nature but not do the same for the bodily humors? Perhaps the most likely answer is that the selection was made by someone who was particularly interested in surgery. This would explain why he dwelt so heavily upon the anatomical constituents of the body, the members, and their properties, and had little or nothing to

¹³ Arnau de Vilanova, *Speculum medicine*, ch. 5, in *Opera Arnaldi de Villanova* (Lyon, 1505). The foliation of the various sixteenth-century editions of the *Speculum* is inconsistent, but their chapterization is virtually identical, and we will therefore refer our citations of Arnau's text here and in the following appendix to chapters of the work.

say about the other, less concrete, *res naturales*. The familiar *res non naturales*—food, drink, sleep—would have been omitted because, as concerns important for a healthful regimen, they were critical above all to physicians rather than to surgeons, just as was the case with the *res contra naturam*, diseases and their causes. On the other hand, the medicinal properties he lists are all ones important to the surgeon: cleansing a wound, maturing an infection and expelling pus, closing and healing an ulcer. Significantly, a number of the properties originally listed by Arnau in the *Speculum* that are omitted here are pointedly medical rather than surgical: the power to induce lactation, to purge the belly, to increase urination or sweating. Still, some of Garcia's choices remain obscure: why, for example, would a surgery-minded selector have thought that a definition of "ulcerative" (*ulcerativa*) power, say, was important to include while a definition of a very similar one that follows in Arnau's original table, "corrosive" power, was not? A second associated puzzle is, who was that surgery-minded selector? It may perfectly well have been Francesc Garcia himself, of course, but it is not at all impossible that Garcia had originally carried out a longer and more systematic culling of definitions from all parts of the *Speculum*, from which an aspiring translator subsequently picked out fifty for translation into Hebrew. This will remain undecidable if a copy of Garcia's Latin text is never found.

Now let us consider the transliteration in the left-hand columns not merely as a Latin text but instead as a text that someone chose to write down in Hebrew characters. Why was this done? What was the transliteration's connection, if any, to the Hebrew translation in the right-hand columns, and in particular, was it produced before or after the translation was made? It is not easy to be sure, because all the versions are verbally quite close, but there is one passage that provides a hint. In the *Speculum*, Arnau had written "Lubrificativa medicina *lenem* efficit superficiem meatus in quo corpus durum et asperum continetur," but the compilation's formulation (sentence 41) reads "... facit superficiem *levem* meatus ..."—the crucial word definitely reads לִיבִיִּם in the transliterated version, with a line over the *bet* to indicate that it should be read as a *v*, not a *b*. The transliterator's mistake is not at all surprising, because the Latin "n" and "v" could be easily confused by a reader. But the Hebrew translation uses רפה, "loose" or "slack," tending to imply that the translator must have read *lenem* rather than *levem*. This would seem to indicate that he could not have been working from the Latin in the transliterated form given here, must instead have been translating directly from a Latin text which in this instance he read correctly. The text would then have been transliterated independently, conceivably by the

translator himself from the same Latin manuscript (this time reading *levem* for *lenem*), to accompany the Hebrew translation.

The rarity of this action—the decision to transcribe what is apparently an entire Latin work, however short, in Hebrew characters—deserves to be emphasized. Gad Freudenthal's summary of the evidence would seem to indicate that it is highly unusual, that Hebrew transcriptions of even short Latin passages were virtually non-existent in the Middle Ages.¹⁴ A few thirteenth- and fourteenth-century Hebrew works of religious polemic include brief Latin liturgical or scriptural phrases in Hebrew transliteration, sometimes vocalized; they are normally accompanied by a Hebrew translation, and were probably intended to allow a Jewish controversialist to communicate in debate with a Christian adversary. A few Latin charms, too, can be found carefully transliterated in Hebrew texts, no doubt due to a conviction that the efficacy of the charm depended on its aural character rather than its meaning.¹⁵ But although Jews had long transcribed *Arabic* (and occasionally also vernacular) texts in Hebrew letters, extended Latin texts have hitherto not been discovered written in this way. Transliteration implies a desire to engage with another world, and Freudenthal has interpreted its near-absence here as a sign of “the profound estrangement between Jews and the Latin language and culture.”

What then might explain this exceptional transliteration of Francesc Garcia's work? Because it is so unusual, any attempt at an explanation is bound to be speculative; yet speculation at least has the merit of attempting to contextualize the material as far as possible, even if its results can perhaps seem fanciful. We might begin, for example, by remarking that the estrangement between Jews and Latin culture was most easily overcome in the realm of medicine.¹⁶ During the fourteenth century, in Spain, the Midi, and Italy, academic Galenic medicine enjoyed a growing social prestige in Jewish as well as Christian society. Practitioners in these two worlds interacted and collaborated and shared a common medical culture that presumed the value of medical theory and the superiority of the learned physician to his lay

¹⁴ Only a few years ago it was thought that no such texts existed at all: see Gad Freudenthal, “Arabic and Latin Cultures as Resources for the Hebrew Translation Movement,” pp. 74–105 in *Science in Medieval Jewish Cultures*, ed. Gad Freudenthal (Cambridge: Cambridge University Press, 2011), on p. 90. Now two other texts of this sort have been discovered besides the one we discuss here: see Gad Freudenthal, “Latin-into-Hebrew in the Making: Bilingual Documents in Two Facing Columns and Their Possible Function,” elsewhere in this volume (pp. 59–67).

¹⁵ See the articles elsewhere in this volume by Bobichon and by Mesler.

¹⁶ Freudenthal, “Arabic and Latin Cultures,” pp. 100–103.

patient, and, impelled by such values, some Jews were by the end of the century studying formally or informally at European medical faculties.¹⁷ In turn, patients were impressed by signs of such learning in their healers, manifest in the technical language of the faculty. Already in the early fourteenth century, for example, we find a female healer in Catalonia telling her patients learnedly that a quartan fever could be diagnosed from red urine, and that an *apostema* (abscess) was indicated by foam on the urine, though she had certainly never read a text on uroscopy, much less attended a medical school.¹⁸ There were no rigid religious lines drawn in medical treatment, and Jewish physicians and surgeons can certainly be found contracting with Christian patients in this period;¹⁹ might the transliterator have hoped that the ability to deliver pithy statements of Latin medical learning (like transliterated sentences from Arnau's *Speculum medicine*) would help consolidate a Jewish practitioner's aura of knowledgeability vis-à-vis a prospective client?

In fact, this is *not* as fanciful as it might at first seem. Writing in Catalonia (Lleida) in the 1380s, the Jewish physician Maimon Gallipapa satirized his colleagues wickedly in "The Words of the Physicians." Among other things, he wrote "Go and see the physician's deeds and tricks ... for he knows sickness and accident and its causes. To prepare a remedy and healing for a disease, he inflates his language and speaks expansively. When the time comes, he goes to the Latin pharmacist, poises his hand to show off his ring, [and] arranges his speech in foreign words to match his wisdom ..." A modern editor has commented on the word "foreign" as follows: "*in Latin*, as was customary among physicians."²⁰ Our transliterated phrases from the *Speculum* would have suited the object of Gallipapa's satire very nicely! But such a speculation depends ultimately on so many unsupported

¹⁷ Luis García-Ballester, Lola Ferre, and Eduard Feliu, "Jewish Appreciation of Fourteenth-Century Scholastic Medicine," *Osiris*, second series, 1 (1990): 85–117.

¹⁸ Josep Perarnau i Espelt, "Activitats i formules supersticiosos de guarició a Catalunya en la primera meitat del segle XIV," *Arxiu de Textos Catalans Antics* 1 (1982): 47–78, at 67–69.

¹⁹ For the Midi, Joseph Shatzmiller, *Médecine et justice en Provence médiévale* (Aix-en-Provence: Publications de l'Université de Provence, 1989); for Catalonia, Michael R. McVaugh, *Medicine before the Plague: Practitioners and Their Patients in the Crown of Aragon, 1285–1345* (Cambridge: Cambridge University Press, 1993), pp. 55–64; and, more generally, Luis García-Ballester, "Ethical Problems in the Relationship between Doctors and Patients in Fourteenth-Century Spain: On Christian and Jewish Practitioners," pp. 11–32 in *Medicine and Medical Ethics in Medieval and Early Modern Spain*, eds. Samuel S. Kottke and Luis García-Ballester (Jerusalem: Magnes Press, 1966).

²⁰ *Ha-širah ha-Ivrit bi-Sefarad u-ve-Provans*, ed. Haim Schirmann (Jerusalem: Bialik Institute, 1960), vol. 4, p. 552. On Maimon Gallipapa, see further García-Ballester, "Ethical Problems," pp. 23, 30–31.

assumptions that it cannot really compel conviction, even though it helps bring alive the setting in which the work was produced, and in the end it is probably best to stress the exceptional nature of the transliteration and to recognize that its interpretation is one more puzzle presented by the text.

In any case, the transliteration itself seems to have been copied and recopied with particular care, this time perhaps because the unfamiliarity of the letter combinations forced Hebrew scribes to write slowly and cautiously. A few errors have crept into the transliteration, to be sure. Thus, the headings for tables 2–3 have dropped out of the text. In sentence 20 the subject noun is written as *spiritibus* rather than *spiritus* (probably influenced by the *De spiritibus* comprising the line immediately above), and a little further on *pervius* has become *perrus*, when a copyist wrote *resh* for *bet*; similarly the *asperitatem* of sentence 42 has become *aspeditatem*, when a copyist misread a *resh* as a *dalet*. “Dispositiones” comes out as *disponent* in sentence 3 and as *disponens* in sentence 4; *corda* is repeated carelessly in sentence 18 when the second time the word should have been *cor*. But some of these discrepancies with Arnau’s text could be the product of variants that had crept into the copy from which Garcia made his compilation, like the *generantur* in sentence 11 mentioned above. Such divergences could easily have arisen in the history of the Latin original. This possibility becomes a virtual certainty when the translation and transliteration (which we have already argued are likely to have been produced independently from the same Latin manuscript) agree in disagreeing with the text of the *Speculum medicine*: in sentence 25, for example, both read *exsiccando*/drying, when Arnau originally wrote *secando*. On the whole, the original transliteration was remarkably accurate and its later copyists were true to what they had before them. In fact, the scribe who copied the text in our manuscript was careful enough to have caught and corrected his mistakes in sentences 5, 14, and 17, whether he understood what he was writing or not.

Studying the transliteration in detail reveals a few quirks of style that are perhaps worth mentioning for the questions they raise about the underlying technique involved. There are certainly strong indications that an oral intermediary was involved in putting the Latin into Hebrew characters. Most obviously, initial Latin “st-” (e.g., *stupefactiva*, sentence 38) and “sp-” (*spermate*, 14) are always prefixed with *alef*, reflecting the word-initial epenthesis natural in Spanish or Catalan; perhaps someone was reading the Latin aloud to the transliterator, but the scribe may equally well have subvocalized what he read and written down the result. Pronunciation norms are presumably also behind the transliterator’s routine representation of “c” (or “t” or “x”) before “e” or “i” with a sibilant, *šin* or *samek*: thus, before *e*: *cerebrum* (17),

necessarium (4); before *i*: *reducit* (48), *facit* (32), *corpulentia* (14), *complexio* (14). The “-sc-” in “susceptiva” is rendered with a *šin/samek* digram. “Scilicet” is written with initial *šin* followed by *samek* in 14, but with *samek* followed by *šin* in 27, which incidentally strongly hints that the transliterator was not blindly following a fixed pattern of substitution or indeed trying to maintain consistency in spelling; *cartillago*, indeed, is spelled with a single *lamed* in 16 but with two *lameds* in 18. (And compare the various transliterations of “complexio-.”) On the other hand, “sicciora” in 18 is spelled with a medial “-qs-”, which does not suggest pronunciation values at all. Another finding that is hard to interpret is the inconsistency in representing double letters in Latin. Latin “-ll-” is regularly represented with *lamed/lamed* (seven times out of ten) and “-ss-” is treated comparably (two out of five); “-dd-” is thus represented once; but double *t* and *n* are never recognized. The transliterator would seem to have been following his own impulse as to when to replicate the doublet letters that he saw in the Latin text.

The Hebrew translation is perhaps slightly more trying to a Hebrew reader than its Latin partner is to readers of Latin. The relative poverty of classical Hebrew as a resource for the kinds of technical language the translator wishes to employ can force him to enlist words that have a wider, more generic range of meanings than the Latin term they translate. Some of his choices had already come to acquire a new, specifically medical meaning in Hebrew writing of the period, like the causative form *להוליד*, which in philosophical literature also denotes “generate” (v.t.) and not “give birth.” Like other Hebrew writers trying to create a flexible Hebrew prose for which they had little precedent, our translator struggles with syntax and dependent clauses. Some of his solutions sound awkward to modern ears, especially when he is trying to remain faithful to the Latin word order. Thus, for example, sentence 41, which we have already mentioned for a discrepancy between the Latin and Hebrew versions, ends a bit lamely in Hebrew with the direct object of the verb displaced to the sentence’s end:

הממעדת היא אשר תשיב שטח המעבר שהיה בו קושי רפה

Literally, the Hebrew reads: “the lubricative is that which renders the surface of the passage in which there was hardness slack.” Comparison with the Latin clarifies that *רפה*—slack, or slackness—modifies *תשיב* (renders). The Latin word (“duricities”) corresponding to *קושי* appears at the end of its sentence, and the translator seems to have wished to follow this order, but found himself with a word remaining (“lenem”), with which he concluded awkwardly. In general, we have the impression that while he had no difficulty in translating simple subject-predicate sentences, he became less fluid as the Latin original became more complex.

As far as technical vocabulary goes, however, our translator seems to have been quite familiar with Latin medical terminology. It is notable, for example, that he translates the Latin words for the types of bodily tissues with equivalents whose technical application had started to spread in the Hebrew translations of medical texts (from Arabic or Latin) of the thirteenth century—*caro* (בשר), *pinguedo* (שומן), *corda* (מיתר), *nervi* (עצבים), *panniculus* (קרומ), *ligamentum* (קשור), *cartilago* (though the manuscript spells this last word, שחוס, with a *šin* instead of a *samek*). An indication of the depth of his knowledge is provided by his response to the Latin word *zirbus*, which appears in both sentences 17 and 18. *Zirbus* was a Latin neologism, a purely technical word that had meaning only for physicians. It had originated in the eleventh or twelfth century as a transliteration from Arabic *ثرب*, denoting the omentum (a fatty fold of the peritoneum supporting the viscera), and had passed into general currency in Latin academic medical discourse;²¹ the thirteenth-century Hebrew translators who encountered it eventually evolved Hebrew חלב as an equivalent.²² Our translator evidently had no difficulty with the Latin neologism and knew perfectly well the Hebrew equivalent that had emerged, rendering the word חלב each time.

A second demonstration of his understanding of Latin medical terminology arises in connection with his way of dealing with the term *solutio continuitatis*, denoting any kind of wound or break in any part of the body, which had probably gained its universal currency in Latin medicine and surgery from its use in Gerard of Cremona's Latin version of the *Canon* to translate Arabic *انفراق الاتصال*. Thirteenth-century Hebrew translators had not yet evolved a consistent translation of the term, though they maintained it as a compound construction.²³ Hillel of Verona's translation of Bruno Longoburgo's *Chirurgia* (1254) renders the Latin term as התרת הדבקות. Zerahyah ben Isaac ben Še'alti'el Ḥen, translating Maimonides' *Medical Aphorisms* from Arabic (ca. 1290), expressed it as הפרדת הדבקות. A decade or so before, in a similar translation, Nathan ha-Me'ati had equated the phrase with פרוק החבור, and David Caslari of Besalù employed the identical equivalence in translating (ca. 1305) Galen's *De inequali temperie*, this time however

²¹ Joseph Hyrtl, *Das Arabische und Hebräische in der Anatomie* (Vienna: W. Braumüller, 1879), pp. 247–249; Adolf Mauritz Fonahn, *Arabic and Latin Anatomical Terminology, Chiefly from the Middle Ages* (Kristiania: In Commission by Jacob Dybwad, 1922), p. 174, No. 3711.

²² Gerrit Bos, *Novel Medical and General Hebrew Terminology in the Thirteenth Century*, *Journal of Semitic Studies*, Supplement 27 (Oxford: Oxford University Press, 2011), p. 43.

²³ Bos, *Terminology*, p. 24.

translating from Latin rather than Arabic.²⁴ Sentence 32 of our text repeats Arnau's use of *solutio continuitatis* in his *Speculum*, and our Hebrew translator proves to have rendered it exactly as Nathan and David had done, as פרוקי חבור. Had he settled on their expression independently, on the basis of his own familiarity with technical Latin, or does his use of their term indicate his acquaintance with the emerging Hebrew medical literature?

A final case in point leaves this question open, and involves his response to the Latin term *nucha*, deriving from Arabic نخاع and referring to the spinal cord, from which sensory and motor nerves communicate to the various parts of the body.²⁵ The term appears first in sentence 17 of the Latin with no explanation, but our translator evidently understood it perfectly well and began by summarizing its meaning and function to his readers before giving the word itself in transliterated form, as נוקא. Interestingly, the same anatomical feature was referred to by thirteenth-century translators (Nathan ha-Me'ati and Zerahyah Hen), not with a transliteration, but with a standard rabbinic term חוט של שדרה.²⁶ Does this perhaps hint that our man was better acquainted with Latin than with existing Hebrew medical literature? Our evidence is too scanty to be able to judge. Indeed, we are still a long way from being able to map the diffusion and standardization of Hebrew medical terminology in the Middle Ages.

One last peculiarity of the Hebrew translation is worth mentioning, because it suggests that an oral element may have been present in that process. In sentence 44, the Latin text revealed by the Hebrew transliteration defines a "contractive" (*contractiva*) medicine; in sentence 45, it explains why an "expressive" (*expressiva*) medicine is stronger than one that is *contractiva*. On the surface, it seems a little curious that the Hebrew translator of these two sentences should have used two different words to render a single Latin technical term, *contractiva*: קובצת ("bunch together") in sentence 44 and כווצת ("cramp," "contract") in sentence 45. But if we appreciate that those two words would have been pronounced essentially identically, it immediately raises the possibility that one individual could have spoken the Hebrew text aloud as he translated it for another person to write down, and that the writer thought (for whatever reason), the second time he heard it, that a new word was meant. The possibility certainly gains strength from our earlier recognition that exactly this sort of oral link seems to have played a part in the transliteration process as well.

²⁴ See the forthcoming edition by Bos-McVaugh-Shatzmiller.

²⁵ Fonahn, *Terminology*, p. 102, No. 2252.

²⁶ We are grateful to Gerrit Bos for this information.

All these intriguing issues that we have mentioned are likely to remain unsolved unless perhaps another different, fuller version of Francesc Garcia's work is someday discovered. Still, Moritz Steinschneider was quite right a century ago, as far as he went: even though who composed "Arnau's *Definitions*," who translated and transliterated it, and why, and even when, may all be obscure, the *Definitions* can indeed be acknowledged as a Latin-Hebrew translation made from the *Speculum*, however brief and idiosyncratic it may be. Yet as tied to a Latin-Hebrew transliteration, too, it is more than that, despite the puzzles it presents. We would like to imagine that Steinschneider himself would have been pleased and intrigued by our findings—and would probably have had answers for some of our puzzles.

Please see appendix on pp. 455–468.

APPENDIX
LATIN INTO HEBREW—TWICE OVER!
PRESENTING LATIN SCHOLASTIC MEDICINE
TO A JEWISH AUDIENCE
(PP. 31–43)

Susan Einbinder and Michael McVaugh

As promised in our article (above, p. 32), we here provide editions of the Latin and the Hebrew texts (both in Hebrew characters) carried by MS Lyon, Bibliothèque municipale 15, fols. 176^v–173^r, accompanied by the re-transliteration into Latin characters of the former and an English translation. For technical reasons, this Appendix could not be printed in immediate sequel to our article.

As already noted (above, p. 32), fols. 176^v–173^r of the Lyon MS correspond to images 43–48 in the on-line version available in March 2013 at <http://www.e-corpus.org/notices/114169/gallery/> (the manuscript is foliated in the upper-right corner of each right-hand leaf in sequence from the back). A Hebrew reader counting folios from the proper beginning of the codex, i.e., from right to left, would identify these folios as fols. 20^r–22^v, a foliation that unfortunately does not correspond to the inscription on the pages. In what follows, the two central columns of each double-page spread reproduce each successive double-columned leaf. To the left of these columns, we give Francesc Garcia's original Latin text as reconstructed from the Hebrew transliteration next to it; to the right, we give an English version of the Hebrew translation of Garcia's text. The numbers supplied in the far left column are editorial, meant to facilitate reference to individual sentences. Angle brackets have been used to indicate material that was evidently originally present in Garcia's Latin text but has now disappeared, either from the Latin and the transliteration or from the translation.

The reconstructed Latin text follows the transliteration closely, mistakes and all, but we have occasionally inserted (in parentheses) an alternative reading that the transliterator may have misread. The chapter numbers included at the end of each sentence refer to the comparable text as found in the *Speculum medicine* printed in *Opera Arnaldi de Villanova* (Venice, 1505). The text in the Hebrew transliteration has been divided up so as to correspond to the underlying Latin. Where the Hebrew copyist has enjambed prepositions and objects normally not attached in Latin, we have separated the two words. In the Hebrew translation, mistakes noted and corrected by the copyist have been indicated by strike-over, and scribal abbreviations, for instance the insertion of an apostrophe in place of a plural ending, have been retained. Line fillers have been eliminated as well as the original line breaks. We have used bold-face type to indicate larger or heavier characters in the manuscript. In rare cases where we could not decipher a word, we have also indicated this with a bracketed question mark following a hypothetical transliteration.

(image 43 / fol. 176^{va} [20^{ra}])

1. In definitionibus et aliquibus considerationibus extractis a Francisco Garsai.
 אין דיפניסיאוניובוש איט אליקיבוש קונשידיראסיאוניובוש איקשטראקטום א פרינשישקו גרישאי
2. Introductiones appellantur indebite que prima et communia artis vocabula non exponent. (preface)
 אינטורודוקסיאוניש אפילאנטור אינדיביטי קי פרימא איט קומוניאה ארטיש בוקאבולא גון איקשפונט
3. Medicina est scientia cognoscendi disponent (dispositionis) humani corporis in quantum sanabile et conservandi sanitatem inventam in eo et restituendi deperditam in quantum possibile fuerit. (ch. 1)
 מידיסינא אישט שיאינשיאה קונגוסינדי דישפונט אומאני קורפוריש אין קאנטום שאנאבילי איט קונשירב'אנדי שאניטאטיס אינב'יטאם אין איא איט רישטיטואינדי דיפירדיטאם אין קאנטום פושיביללי פ'ואיריט
4. Theorica est pars illa in qua disponens (dispositiones) sanabilis corporis cognosci docentur quantum necessarium est ad opus explendum. (ch. 1)
 טיאוריקא אישט פארש איללא אין קא דישפונט שאנאביליש קורפוריש קונגושי דושינטור קאנטום ניששאריואום אישט אד אופוש איקשפלינדום
5. Practica est pars illa in qua modus recte operandi describitur secundum exigentiam dispositionis precognite. (ch. 1)
 פראטיקא אישט פארש אללא אין קא דיש" מודוש ריקטי אופיראנדי דישקריבטור שיקונדום איקשיגינשיאם דישפושסיאוניש פריקונטי
- (6. De elementis)
7. Elementa sunt prima et simplicia componentia
 אילמנטא שונט פרימא איט שימפילישיאה קונפונגינשיאה

(image 43 / fol. 176^{vb} [20^{rb}])**הנבחר הנלקט ממראת—אישיקולום
ארנאלדי****A SELECTION TAKEN FROM THE
MIRROR—SPECULUM ARNALDI****ארנאבט בגדרים והשערות מה ע"י החכם
פרנשים גירישאי**Arnau on Definitions and Some
Considerations by the sage Fransesc
Geresai.הנה תקרא שלא כהוגן הצעה ומבוא מה שלא
יבאר המלות הראשונות והכוללות אשר
במלאכהWhat is improperly called an
introduction [is that] which does not
explain the primary and general words
of the art.הרפואה היא חכמת הכרת תכונות הגוף
האנושי במהו מקבל הבריאות ושמירת
הבריאות הנמצא בו והשבתו בסורו כפי
האפשרMedicine is the science of recognizing
the attributes of the human body
concerning its health, the preservation
of existing health, and restoration [of
health] when it departs inasmuch as
[this is] possible.העיון הוא אותו החלק אשר תודע בו תכונות
הגוף המקבל הבריאות כפי המלאכה ההכרחי
למלאכה העיוניתTheory is that part [of the art] through
which are known the attributes of the
healthy body according to the art,
[which is] necessary for the theoretical
art.המעשה הוא החלק שיתואר בו אופן המפעל
הישר כפי הצטרכו התכונה המשוערתPractice is that part in which is
described the manner of direct
operation according to the
requirements of the considered
attribute.**ביסודות****ON ELEMENTS**

היסודות הם המרכיבים הראשונים

The elements are the primary
components

(image 44 / fol. 175^{ra} [20^{va}])

... componentia omnium mixtorum.
(ch. 2)

קונפונישיאה אומניאום מיקשטורום

8. De complexionibus (ch. 3)

די קונפליקטיאניבוש

9. Complexio est qualitas in commixtis corporibus proveniens ex mutua actione qualitatum primarum. (ch. 3)

קונפליקשיאו אישט קאליטאש אין קונמיקשטיש קורפוריבוש פרוביניאניש איקש מוטו(א אק)סיאוני קאליטאטום פרימארום

10. De humoribus (ch. 4)

די אומוריבוש

11. Humor est corpus liquidum fluidum in quot (quo) primo convertitur chilus et ex quo immediate consimilia (membra) generantur. (ch. 4)

אומר אישט קורפוש ליקידום פ'לואידום אין קוט פרימו קונב'רטיטור שילוש איט איקש קו אין מידיאטי קונשימיליאה גינראטור

12. De membris (ch. 5)

די מימברי

13. Membrum est pars sanabilis corporis integralis et solida susceptiva (susceptibilis) sanitatis. (ch. 5)

מימברום אישט פארש שאנאביליש קורפוריש אינטיגראליש איט שולידא שושסיפטיבא שאנטיאטיש

14. Membra differunt materia scilicet spermate et sanguine, secundo differunt dignitate quia principalia et non principalia, tertio differunt corpulentia quia simplicia et composita, quarto differunt complexione quia est dare temperate et

מימברא דיפ'רונט מאטיריאה שיליסט אישפירמאטי איט שאנגיני. שיקונדו דיפ'רונט דיקניטאטי קיאה פרינשיפאליאה איט נון פרינסיפאליאה. טירשיאו. דיפ'רונט קורפולינסיאה קיאה שימפליסיאה איט נון? קונפושאיטא קארטו. דיפ'רונט קונפלקסיאוני קיאה אישט דארי טימפראטא איט [דיש-]

(image 44 / fol. 175^b [20^{vb}])

והפשוטים למורכבים כלם the simple and compound alike.

במזג**ON COMPLEXION**המזג הוא איכות מגיע בגשמים המורכבים
לסבת שנוי האיכויות האיכויות הראשוניםThe complexion is a quality that occurs
in compound bodies by virtue of
change in the primary qualities.**בליחה****ON HUMORS**הליחה הוא גשם רטוב נוזל אשר אליו ישתנה
הכילוס ראשוני וילד ממנו האברים המתדמים
בלי אמצעי'The humor is a wet, liquid body into
which the chyle is first changed [so
that] the members of a consimilar kind
are generated from it directly.**באברים****ON MEMBERS**האבר הוא חלק כולליי מהגוף המקבל
הבריאות והוא חלק קשה ומקבל הבריאותThe member is an integrative part of
the body that receives health. It is solid
and receives health.האברים יובדלו בחמרם רצו' שמהם מהזרע
ומהם מהדם ויובדלו שנית במעלתם כי מהם
נכבדים ובלתי נכבדים. ויובדלו שלישית
בגופיותם כי מהם פשוטים ומהם מורכבים.
ויבדלו רביעי' במזגם כי נוכל להחליט שמהם
שוי המזג ומהם בלתי שוי המזג.The members are distinguished by
their substance, that is, some of them
are from seed and some from the
blood. They are distinguished a second
time according to degree, for some of
them are important and some are not.
They are distinguished thirdly by
their corporeality, for some of them
are simple and some are compound.
They are distinguished fourthly by
their complexion, for we can decide
that some of them are of balanced
complexion and some unbalanced.

האברים החמים מהעור

The members that are warmer than the
skin

(Image 45 / fol. 175^{va} [21^{ra}])

distemperata in complexione. (ch. 5)

15. Membra calidiora cute in ordine sunt cor, epar, caro simplex, musculus, splen, renes, arterie, vene, pulmo. (ch. 5)

דישטימפריאטא אין קונפליקשיאונ

מימברא קאלידיאורא קוטי אין אורדיני שונט. קור. איפאר. קארו שימפליקשי. מושקלוש. אישפלין. ריניש. ארטיריא. ב'ני. פולמו

16. Membra frigidiora cute sunt os, cartilago, ligamentum, corda, panniculus, nervus, nucha, cerebrum, zirbus, pinguedo. (ch. 5)

מימברא פ'ריג'ידיאורא קוטי שונט. אוש. קארטילאגו. ליגאמינטום. קורדא. פאניקולוש. זירבוש. נוקא. שיריברום. זירבוש. פינג'ידו

17. Membra humidiora cute: pinguedo, zirbus, nervus, cerebrum, nucha, caro mamillarum, testicularum, splen, pulmo, epar, et post musculus. (ch. 5)

מימברא קאל אומידיאורא קוטי. פינג'ידו. זירבוש. סיריברום [א] נוקא. קארו מאמיללארום. טישטיקולורום. אישפלין. פולמו. איפאר. ריניש. אית פושט מושקולוש

18. Membra sicciora cute: os, cartillago, ligamentum, corda, panniculus, arterie, vene, nervi motivi, corde (cor), nervi sensus. (ch. 5)

מימברא שיקשיאורא קוטי. אוש. קארטילאגו. ליגאמינטום. קורדא. פאניקולוש. ארטיריא. ב'ני. נרבי מוטיבי. קורדי. נרבי שינשוש

19. De spiritibus (ch. 8)

20. Spiritibus (spiritus) est vapor subtilis et perrius (pervius) ex naturali sanguine generatus ad deferendum virtutes influentes a principalibus membris ad alia membra (ch. 8)

די אישפריטיבוש

אישפריטיבוש אישט ב'אפור שובטיליש אית פוררוש איקש נאטוראלי שאנגני גינראטוש אד דיפ'ירינדום ב'רטוטם אינפ'ולואינטיש א פרינסיפאלבוש מימבריש אד אליאה מימברא

21. De prima tabula Speculum (ch. 33)

די פרימא טאבולא אישפיקולום

(Image 45 / fol. 175^{vb} [21^{rb}])

האברים החמים מהעור כפי סדור מדרגתם הם: הלב. הכבד. הבשר הפשוט. העצל. הטחול. הכליות. השריינים. העורקים. הריאה.

The members that are warmer than the skin according to the order of their degree are the heart, the liver, the simple flesh, the muscle, the spleen, the kidneys, the arteries, the veins, the lungs.

האברים הקרים מהעור כפי הסדור הם: העצם. השחוס. הקשור. המיתר. הקרום. העצב. שרש צמיחת העצבים הנק' נוקא. המוח. החלב. השומן.

The members that are colder than the skin, in order, are the bone, the cartilage, the ligaments, the sinews, the membrane, the nerve, that which generates the nerves [and] is called 'nucha', the brain, the fat, the omentum.

האברים הלחים מהעור הם: שומן. חלב. המוח. צמיחת העצבים. בשר השדים והבצים. הטחול. הריאה. הכבד. והכליות. ואחריהם העצלים.

The members that are moister than the skin are the omentum, the fat, the brain, that which generates the nerves, the flesh of the breasts and of the testicles, the spleen, the lungs, the liver, the kidneys, and after them the muscles.

האברים היבשים מהעור: העצם. השחוס. הקשור. הלב. הקרום. השריין. העורקים. עצבי התנועה. המיתרים. עצבי החוש.

The members that are drier than the skin: the bone, the cartilage, the ligaments, the heart, the membrane, the arteries, the veins, the nerves of movement, the sinews, the nerves of sensation.

ברוחות**OF SPIRITS**

הרוח הוא איד דק מתילד מהדם לכלכל הכח והוא נאצל מהאברים הראשיים לזולתם

The spirit is a subtle vapor that is generated from the blood to furnish force and that flows from the principal members to the other [members].

העיון בלוח הראשון**CONSIDERATION OF THE FIRST TABLE**

(Image 46 / fol. 174^{ra} [21^{va}])

22. Subtliativa medicina est illa in que (qua) substantiam humore attenuat (humoris attenuate) cum remissa aut temperata caliditate (ch. 34) שובטליאטיבא מידיסינא אישט איללא אין קי שובשטאנשיאם אומורי אטינואט קום רימששא אבט טימפיראטא קאלדיטאטי
23. Resolutiva que convertit humorem in vaporem. (ch. 34) רישאולוטיב'א קי קונב'רטיט אומורים אין ב'אפורים
24. Abstersiva est que removet viscositates a superficie membri vel ab orificiis pororum fortiter, sed mundificativa leviter facit. (ch. 34) אבשטירשיב'א אישט קי רימוב'יט ב'ישקושיאטיאטיש א שופרפיסיאי מימברי ביל אב אורופ'יסאוש פורררום פ'ורטיטר. שיט מונדיפ'יקאטיב'א ליב'יטר פ'אסיט
25. Exasperativa est que reddit superficiem membri inequalem, aut contrahendo aut exsiccando. (ch. 34) איקשאשפיראטיב'א אישט קי רידדיט שופר פ'יסיאם מימברי אין-איקאלים אוט קונטראינדו אבט איקשסיקאנד
26. Lotiva medicina est que mundificat mediante aquitate (aqua) et caliditate. (ch. 57) לוטיבא מידיסינא אישט קי מונדיפ'יקאט מידיאנטי אקיאטיאטי אט קאלדיטאטי
27. Incisiva est que humorem incidit in partes, scilicet humorum viscosum adherentem. (ch. 39) אינשישאב'א אישט קי אומורים אינטידיט אין פארטיש סילישיט אומורום בישקושום אדאירינטיים
28. Aperitiva est illa que convenit perforare obstaculum quot (quod) est in meatu. (ch. 34) אפיריטיב'א אשט איללא קואי קונב'ינטי פירפ'ורארי אובשטאקולום קוט אישט אין מיאטו
29. Mollificativa est que duriciem membri resolvit. (ch. 35) מולליפ'יקאטיב'א אישט קי דוריסיאם מימברי רישאולב'יט
30. Maturativa est que provocat saniem in apostematibus. (ch. 36) מאטוראטיב'א אישט קי פורוב'וקאט שאניאם אין אפושטימאטיבוש

(Image 46 / fol. 174^{rb} [21^{vb}])

התרופה המדקדקת היא המדקדק עצם הליחות בחום חלוש או מזוג.	The subtle-making medicine is that which makes fine the matter of the humors by means of weak or temperate heat.
התרופה המתכת היא המשנה הליחה אל האדיות.	The [dissolving/resolute] medicine is that which converts the humor into vapors.
הממרקת היא המסירה הדבקות משטח האבר או מפיות הנקבים הדקים בחזקה אבל המנקה תעשה זה בחולשה.	The scouring medicine is that which acts strongly [to] remove sticky [matter] from the surface of the member or from the pores, [unlike] the cleansing [medicine], which acts weakly.
המנחירה היא אותה שתשיב שטח האבר לבלתי שוה בקביעות או בנגוב.	The roughening [medicine] is that which renders the surface of the member uneven by tightening or drying.
התרופה הרוחצת היא המנקה במצוץ מימיות וחום.	The washing medicine is that which cleans by means of wateriness and heat.
המחכתת היא אותה שתחתך הליחה לחלקים, ר"ל הליחה הדבקה.	The cutting [medicine] is that which cuts the humor into parts, i.e., the sticky humor.
הפותחת היא אותה אשר תאזר בחקה הנקיבה בסתום אשר במעבר.	The opening [medicine] is that which is suitable for perforating a blockage in a passage.
המרככת היא המתכת קושי האבר.	The softening [medicine] is that which dissolves the hardness of a member.
המבשלת היא התרופה המגירה המוגלת במורסות.	The ripening (maturative) [medicine] is that which sheds the pus from an abscess.

(Image 47 / fol. 174^{va} [22^{ra}])

31. *Attractiva est illa que attrahit a profundo membri. (ch. 40)* אטראקטיב'א אישט איללא קי אטראיט א פרופ'ונדו מימברי
32. *Mordicativa est que in membro plures minutas et invisibiles facit solutiones contunaiittis (continuitatis). (ch. 41)* מורדיקאטיבא אישט קי אין מימברו פלוריש מינוטאש איט אין בישביליש פאסיט שולוסיאוניש קונטוניאיטטיש
33. *Ulcerativa est que vesicat membrum molle et rumpit. (ch. 44)* אולסיראטיבא אישט קי בישיקאט[א] מימברום מוללי איט רומפיט
34. *Cauterizativa consumit carnem et facit crustam (ch. 49)* קבטריזאטיב'א קונשומיט קארנים איט פאסיט קורושטאם
- (35. De tabula secunda)**
36. *Repercussiva facit retrocedere humorem. (ch. 52)* ריפירקושאיב'א פאסיט ריטרוסידירי אומורים
37. *Ingrossativa prohibet humorem fluere. (ch. 53)* אינגרושאטיב'א פרואיביט אומורים פ'לואירי
38. *Stupefactiva removet sensum et motum membri. (ch. 55)* אישטופיפ'אקטיב'א רימוב'יט שינשום איט מוטום מימברי
- (39. De tabula tertia)**
40. *Sordiativa (sordidativa) est que generat humiditatem in ulceribus et prohibet illa mundificari. (ch. 58)* שורדיאטיבא אישט קי ג'נראט אומידיטאטים אין אולסיריבוש איט פרואיביט אי(לל)אה מונדיפ'יקארי
41. *Lubrificativa est que facit superficiem levem meatus in quo erat duricies. (ch. 59)* לובריפ'יקאטיב'א אישט קי פאסיש שופירפ'יסיאים ליב'ים מיאטוש אין קו איראט דוריסיאיש
42. *Applanativa seu lenitiva est que asperitatem lenificat membri. (ch. 60)* אפלנטיבא שיב ליניטיבא אישט קי אשפדיטאטים ליניפ'יקאט מימברי

(Image 47 / fol. 174^{vb} [22^{rb}])

המושכת היא אשר תמשוך מעומק האבר	The attractive [medicine] is that which draws out from deep inside the member.
הנושכת היא אשר תגרום באבר פרוקי חבור רבים בלתי מוחשים	The biting [medicine] is that which causes many imperceptible separations of connection in a member.
המנגעת היא אשר תבעבע האבר הרך ותבקעהו	The wounding [medicine] is that which blisters the soft member and splits it.
הכווה היא אשר תכלה הבשר ותעשה צרבת	The scarring [medicine] is that which consumes the flesh and makes an eschar.

בלוח השני**OF THE SECOND TABLE**

המרתעת היא אשר ישיב החמר אחור	The recoiling [medicine] is that which makes matter back up.
המעבה היא המונעת הזלת הליחה	The thickening [medicine] is that which prevents the humor from flowing.
המרדימה היא אשר תבטל חוש האבר ותנועתו	The soporific [medicine] is that which eliminates the sensation of the member and its movement.

בלוח השלישי**OF THE THIRD TABLE**

המלכלכת היא אשר תוליד לחות מזוהם בנגעים וימנע הנקוי מהם	The dirtying [medicine] is that which generates filthy moisture in wounds and prevents them from being cleansed.
הממעדת היא אשר תשיב שטח המעבר שהיה בו קושי רפה	The lubricative [medicine] is that which restores slackness to the surface of the passage that was hard.
המחליקה היא אשר תחליק שעירות האבר ונחירותו	The smoothing [medicine] is that which smoothes the roughness and unevenness of the member.

(Image 48 / fol. 173^{ra} [22^{va}])

43. De tabula quarta.

די טאבולא קארטא

44. Contractiva est que constringit
partes usque pori et meatus
insspissantur. (ch. 61)

קונטראקטיב'א אישט קי קושטרינג'יט
פארטיש אושקי פורי איט מיאטוש
אינפיששניטור

45. Expressiva est que exprimit fortius
quam contractiva quia pontica. (ch. 62)

איקשפירסיב'א אישט קי איקשפרימיש
פ'ורטיאוש קאם קונטראקטיבא קיאה
פונטיקא

46. Opilativa figitur in meatu et
obturat. (ch. 63)

אופילאטיב'א פ'יג'יטור אין מיאטו איט
אובטוראט

47. Conglutinativa est que facit
adherere partes distantes. (ch. 64)

קונגלוטינאטיבא אישט קי פ'אסיט אדאירירי
פארטיש דישטאנטיש

48. Consolidativa est que continuat aut
que reducit ad unitatem. (ch. 65)

קונשולידאטיבא אישט קי קונטינואט אבט קי
רידוסיט אד אוניטאטים

49. Generativa carnis est que convertit
sanguinem in carnem. (ch. 66)

ג'נראטיב'א קארניש אישט קי קונב'ירטיט
שאנגינים אין קארנים

50. Sigillativa est que ultimo claudat
vulnera concava. (ch. 67)

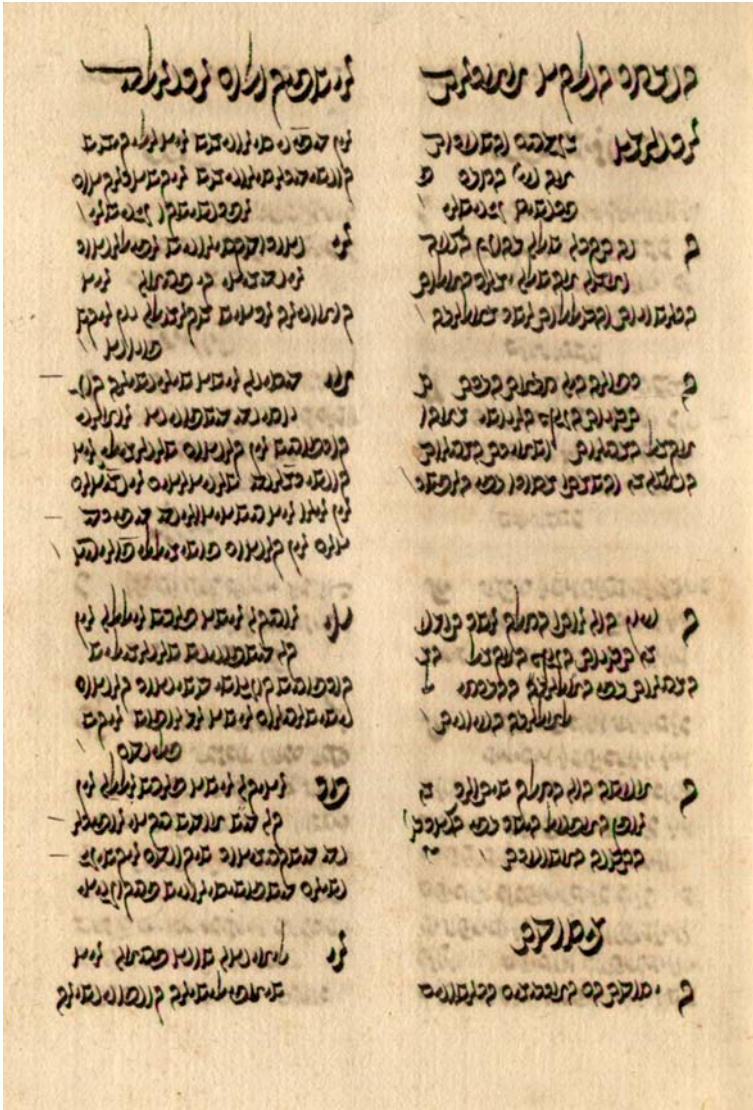
שיגילאטיבא אישט קי אולטימו קלאבדיט
בולנרא קונקאבא

(Image 48 / fol. 173^b [22^{vb}])

בלוח הרביעי

OF THE FOURTH TABLE

הקובצת היא התרופה אשר תקבץ החלקים עד שיתעבו בנקבים הצרים והמעברים	The contracting is that medicine which gathers in the parts until they thicken in the narrow pores and passages.
המעסה היא אשר תעסה יותר מהתרופה הכווצת להיותה עפוצה	The expressive [medicine] is that which, being astringent, expresses more than the contracting medicine.
הסותמת היא הנקבעת במעבר ותסתמהו	The constipating [medicine] is that which becomes fixed in a passage so it will close it.
ה { } היא אשר תחבר החלקים המפורקים והנבדלים	The <i>conglutinative</i> [medicine] is that which joins parts that are separated and distinct.
המדבקת היא תדביק או אשר תשיב אל ההתאחדות	The consolidating [medicine] is that which produces unity.
המצמחת בשר היא אשר תשנה בדם אל הבשר	The [medicine] that generates flesh is that which changes the blood into flesh.
המחתימה היא אשר תסתום הנגעים העמוקים באחרונה	The sealing [medicine] is finally that which closes deep wounds.
תם ונשלם הנלקט והנבחר ממראת ארנאבט דוילא נובא המכונה בלשון לאטי' אישפיקולום ארנאלדי . תהלה לא' ית' אמון	HERE ENDS A CHOICE SELECTION FROM THE MIRROR OF ARNAU DE VILLANOVA, WHICH IS CALLED IN LATIN ESPECULUM ARNALDI. PRAISE TO GOD, MAY HE BE BLESSED. AMEN.



Lyon, Bibliothèque municipale, MS 15, fol. 176^v. The first folio of a work consisting of excerpts from Arnau de Vilanova's *Speculum medicine*. The left column is in Latin, transcribed in Hebrew letters; the right column is its Hebrew translation. Photograph courtesy of *Bibliothèque municipale de Lyon*, Didier Nicole. We are grateful to M. Pierre Guinard, département du Fonds ancien de la Bibliothèque municipale de Lyon, for authorizing its reproduction here.