The Reception of Galen in Hebrew Medieval Scientific Writings

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The Hebrew scientific library was inaugurated around the mid-twelfth century, when Jews—predominantly those who had migrated from al-Andalus to the northern Iberian Peninsula and the south of France—began the immense labour of translating scientific and philosophical works into Hebrew from Arabic and Latin. Growing over the following two centuries, this unprecedented undertaking provided the Jewish communities of the Christian West with a wealth of Greco-Arabic knowledge of which they had previously been unaware.

The bulk of the translated works predictably included parts of Galen's vast body of writing, which had been translated into Arabic by the second half of the ninth century and had begun to be translated from Arabic into Latin by the end of the eleventh century.[1] Versions of Galenic writings from both languages had appeared in Hebrew by the end of the twelfth century and continued to be produced until the fifteenth century. In addition, Galen's philosophical and medical theories and concepts, conveniently elaborated and embedded in works by Arab and, to a lesser degree, Jewish authors who originally wrote in Arabic also reached Jewish audiences through Hebrew translations.

Prior to the beginning of this translation movement and contemporaneously with it, Western Jews had 1already had access to Greco-Arabic science and philosophy in general and to Galen's works and theories in particular through Arabic.[2]This is the case of the Jews of al-Andalus who had adopted the Arabic language and cultural model like

[1]Jacquart Micheau (1996: 32-44); Gutas (1998: 118-19).

[2] I have not included Byzantine Jewish communities in this overview, because their cultural life had different dynamics than that of their Western coreligionists.

all their coreligionists living under Islamic rule. Interestingly, Arabic continued to be a[the?] means for the transmission of medical knowledge among Jews as late as the fifteenth century in some Iberian regions, even after they had been conquered by Christians.[3]The cultural hybridisation on the Iberian peninsula opened additional routes for the spread of Galenised science among non-Arabic-speaking Jews through the translation into Hebrew of commentaries, adaptations, and epitomes elaborated in Arabic by Jewish authors; the translation into Hebrew of works produced in Arabic by Jewish authors who relied on Galenic works and quoted from them; and the circulation of works originally written in Hebrew that included excerpts and partial translations from Galen's works quoted by their authors from the Arabic sources available to them. Thus, as others have noted, although the number of translations into Hebrew from the Galenic corpus was small, Galen's influence on Jewish medicine and thought was not.[4]Not only his ideas, but also fragments and quotations from complete Galenic works never translated into Hebrew reached European Jewish audiences in that language, contributing to the Galenisation of their understanding of science and medicine.

The development of science in medieval Jewish cultures has received significant attention over the last few decades.[5]Much research has been carried out, and many discoveries made since Elinor Lieber published her pioneering study on the transmission of Galen's works in the medieval Islamic world.[6]This contribution presents a brief overview of the current state of the art on the reception of Galenic as well as pseudo-

[3] The most interesting Jewish contribution to medieval Castilian medicine is the *Kitāb al-ṭibb al-qasṭālī al-malūkī* (*Book of Royal Castilian Medicine*), written by an unknown Jewish doctor from Toledo, probably during the first decades of the fourteenth century. The book is based on direct knowledge of Galen's medical corpus and a wide range of medical works of Arabic Galenism. For an edition and Spanish translation, see Vázquez de Benito (2004: 11-107).

[4]Lieber (1981: 167-8); Ferre (2012: 67)

[5]Paraphrasing the title of the edited volume *Science in Medieval Jewish Cultures* by Freudenthal (2011).

[6]Lieber(1981: 167-86)

Galenic texts and ideas in the Hebrew scientific corpus with a view toward better understanding how they were transmitted and used in Hebrew and other languages by Western Jews at various times during the Middle Ages. The focus here is on the consumption of Galenic works and ideas through quotations and the translation of Galenic and pseudo-Galenic works into Hebrew.

1. Quotations: An indirect path for the reception of Galen in Hebrew

As noted, Jewish communities in the Islamicate world adopted the Arabic language and cultural model, which allowed them to take advantage of the Arabic appropriation of Greek science and philosophy. In the case at hand, Arabic afforded them access to the extensive Galenic corpus.Whether directly from Galen's works or through the convenient elaboration and adaptation of his medical theories and concepts—first by Byzantine encyclopaedists and later by authors from the Arabic medical and philosophical tradition—Jews benefitted from the 'Galenisation' of Arabic medicine.[7]One can safely assert that Jewish authors of science and medicine belonged to the Arabic (medical) tradition, not only because they wrote their works in Arabic, but also because they shared their scientific views and ideas with their Arab contemporaries.[8]Based on this premise, the initial focus here is on those Jewish authors writing in Arabic whose works were translated into Hebrew at a later stage.

The obvious author with which to begin is Maimonides (1138–1204), the most prestigious physician and medical author, philosopher, and exegete of medieval Jewish

[7] See above n. 1.

[8] On the difficulty related to determining patterns in the acquisition and transmission of medical knowledge among Jews in the Islamicate world, see Caballero-Navas (2011: 323-4).

culture and whose heavy reliance on Galen's medical theories is well documented. Maimonides authored eleven medical works,[9]three of which are profoundly Galenic.[10] His *Commentary on the Aphorisms of Hippocrates* follows Galen's commentary and was translated into Hebrew three times, while his *Compendium of Galen's Work* was never translated into Hebrew.[11]His *Medical Aphorisms* offered an extensive synthesis of contemporary medical knowledge organised into twenty-five chapters.[12]

Maimonides seems to have written *Medical Aphorisms* (*Kitāb al-fusūl*) around 1185, with the exception of the last chapter, which was written at an uncertain date at the end of his life and edited after his death by someone else.[13]The book covers a spectrum of medical subjects, including anatomy, physiology, pathology, symptomatology, aetiology, surgery, gynaecology,[14]and hygiene. The last three chapters deal, respectively, with explanations of obscure names and concepts in Galen's works (ch.23), a collection of rare and interesting cases, mainly from Galen's writings (ch.24), and criticism of Galen (ch.25).[15]These chapters, and indeed the entire work, rely heavily on Galen's medical ideas. According to Davidson, nine-tenths of the book either derives from Galen's writings or is attributed to him.[16] In fact, Maimonides included quotations, duly attributed, from approximately ninety texts by the Greek physician and took the trouble to cite the work from which he had taken each aphorism.[17]Of note, some of the works quoted by

[9] Davidson (2005: 429-83); Bos (2004: xix-xx). The eleventh Maimonidian medical work, *Treatise on Rules Regarding the Practical Part of the Medical Art*, has been recently identified and published by G. Bos and Y.T. Langermann. See Bos and Langermann (2012); and Bos and Langermann(2014).

[10]On Galen's reception by Maimonides, in particular, see Chapter 11 in this volume by Langermann.

[11] According to Bos (2009:258), Maimonides is reported to have written twenty-one epitomes from Galen, of which a total of eleven survive in some complete and fragmentary copies.

[12]Davidson (2005: 443-52); and Bos(2004), (2007), (2010), (2015) and (2017).

[13]Bos(2004: xx-xxi); Davidson (2005: 446); Langermann (2008a: 326).

[14] I discuss Chapter Sixteen of *Medical Aphorisms* in Caballero-Navas (2009: 33-50) and (2013: 61-84).

[15]Bos (2002: 142); Bos (2004: xxi); Bos (2017).

[16] Davidson (2005: 444).

[17] It is relevant to note that Maimonides used the summaries of several of Galen's writings that he composed in Arabic for the composition of his *Medical Aphorisms*; see Langermann (1993: 177), and Bos (2009: 256).

Maimonides are no longer extant in Greek. For example, in chapter 16, on gynaecology, he quotes Galen's lost *Commentary on Hippocrates'* "*On Diseases of Women*"(whose authenticity is, however, uncertain) in nine aphorisms (1, 3, 9, 14–16, 20, 30, and 35)out of thirty-eight total.[18]Other chapters of Maimonides' work embedded fragments of Galenic works which do not survive in the original Greek version, such as *On Problematical Movements*(ch.7), and *Recognising the Best Physician*(ch.8, aph.21; ch.9, aph.102; ch.13, aphs.18 and 30; and ch.24, aphs.4 and 24).[19] He even preserves some excerpts from pseudo-Galenic *On the Signs of Death* (ch. 3).[20] In one case, the quotation by Maimonides (ch.1, aph.3), based on a lost Greek manuscript, has preserved a better reading of an excerpt from *On the Function of the Parts of the Body*.[21]

Maimonides' quotations were not generally literal. Although Maimonides partly used Galen's words, heal so sometimes reformulated the ideas when he found it necessary, either by abridging the wording or by adding explanations.[22]On occasion, he inserted himself as a supposed eyewitness to a case. For example, aphorism 18 from chapter 16 begins, "I once saw a woman who had been a widow for a long time", recounting the treatment of a widow who had suffered from uterine suffocation resulting from the retention of her own seed. According to him, she was cured after the midwife applied medicines to her genitalia by means of a pessary, which elicited pain and pleasure similar to that experienced during sexual intercourse, together with the expulsion of thick, retained sperm.[23]Maimonides did not, however, witness the episode, but was merely

[18]Bos (2004: xxi); See also Maimonides, *Medical Aphorisms*, 16, ed. and tr. Bos (2015) IV.1-16.
[19] Galen (1988: 22-23 and 130-133).
[20]Bos (2004: xxi–xxii).See also Bos (2002: 144), and Fichtner (2017) 419.150.
[21]Bos (2004: xxii).
[22]Bos (2004: xxii-xxiii).
[23]Maimonides, *Pirqē Mosheh bā-refu'ah*, 16.18, ed. Muntner (1959)209.1-8; English translation by Rosnerand Muntner (1989: 386).See also Maimonides, *Medical Aphorisms*, 16.18, ed. and tr. Bos (2015) IV.9 [English],10 [Arabic]; On this, see also Caballero-Navas (2013: 62).

quoting from Galen's *On Affected Parts*, a work he cites at the end of the aphorism.[24]This anecdote, derived from Galen but elaborated by Aetios of Amida, who appears to have introduced the first person,[25] became well known and circulated widely, often without attribution, during the Middle Ages. Curiously, it was also recounted in Hebrew by a hitherto unidentified Jewish contemporary of Maimonides from the end of the twelfth or early thirteenth century in the treatise *Zikhron ha-ḥolayim ha-howim be-khlei ha-herayon* (*A record of the diseases occurring in the genital members*), which was produced in Castile.[26] Here, the sick woman is not said to be a widow and, although the source is not mentioned, it is plausible that the author took it from Ibn Sīnā's *Canon*.[27]This example exemplifies how diverse routes existed for the transmission and reception of Galen's excerpts in the Hebrew medical literature.

A second instance that follows a similar pattern of citation is found in aphorism 24 in chapter 24. Here, a personal account presents the case of a woman misdiagnosed by midwives and physicians after a miscarriage. The physician reporting the episode, however, makes the correct diagnosis and is able to help the woman expel a (second) putrid foetus several days later.[28]Once again, the physician is not Maimonides, but Galen, from whose *Recognising the Best Physician* Maimonides quotes the incident.[29]Aphorism 25 in the same chapter also presents a first-person narration of the treatment, given to a woman with stomach problems. In this case, the quotation is from pseudo-Galen's *On*

[24] Galen, 6.5,*Loc.Aff*.,8.417;English translation by Siegel (1976: 184).
[25]King (2011: 205-35).
[26]Anonymous, *Zikhron ha-ḥolayim ha-howim be-khlei ha-herayon*, ed. and English trans. Barkai (1998) 118 [Hebrew] and 139 [English].This version does not seem to follow Aetios' re-elaboration.
[27] Caballero-Navas (2013:62).
[28]Maimonides, *Pirqē Mosheh bā-refu'ah*, 24.24, ed. Muntner (1959)306.20-27; English translation by Rosner (1989: 387-88). On this, see Caballero-Navas (2013: 62).
[29] Galen, *Opt. Med. Cogn*., 13.3-9. Galen, *On Examination by which the Best Physicians are Recognized*, ed. y tr. from Arabic by Iskandar (1988: 130-3).

Theriac to Piso.[30]There are many other instances in which Maimonides uses diverse strategies to excerpt and pass down Galen's works in his *Medical Aphorisms*, something thatcan really be appreciated in the modern edition and translation of this work.[31]

It stands to reason that Maimonides has been long considered one of the best medieval ambassadors of Arabic Galenism, particularly through the dissemination of his *Medical Aphorisms,* which from the thirteenth century on was translated into Latin on several occasions.[32]According to Suessman Muntner, Maimonides' *Medical Aphorisms* was considered the "most widely known and wanted repertorium of Galen" throughout the thirteenth and fifteenth centuries in the West.[33]The work was translated twice into Hebrew: by Zeraḥyah ben Isaac Ḥenin 1277 and by Nathan ben Eliezer ha-Me'ati between 1279 and 1283. The number of copies preserved suggests that the *Aphorisms* circulated widely in Hebrew. Ha-Me'ati's translation has been preserved in twenty-three manuscripts (seventeen in Spanish or Provençal script) and Zeraḥya ben Isaac Ḥen's version in fifteen manuscripts(ten in Italian script).[34]Therefore, it would seem, the latter would have circulated among Italian Jews, while Ha-Me'ati's version would be appreciated in Spain and France.[35] The considerable number of extant copies bears witness to the dissemination in Hebrew of numerous actual fragments and abridged translations of Galen's works, many of which were never translated into Hebrew in their entirety, from the last quarter of the thirteenth century. MedievalJ ewish audiences benefittedfrom this remarkable route of indirect transmission.

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[30]Galen, *Ther. Pis*., 14.210-94;English translation by Leigh (2015: 75).Maimonides, *PirqēMoshehbā-refu'ah*, 24.25, ed. Muntner (1959)307.1-5; English translation by Rosner (1989) 387-88.On this, see Caballero-Navas (2013: 62, n. 11).

[31] See above n.12. See also Bos (2002).

[32]Bos (2004: xxv); Ferre (2009: 24-9).

[33]Muntner (1959: xiii), quoted by Bos (2004: xxv).

[34]Richler (1986: 345-56).

[35]Bos (2004: xxv).

Other Jewish authors who wrote in Arabic also contributed to disseminating Galen's ideas and actual excerpts from his works among their northern coreligionists through their writings being translated into Hebrew. Yet, although the substantial impact of Galen upon many authors and their writings has been well established by scholars, comparative studies identifying parallel passages between the works of those Jewish authors and the Galenic corpus remain rare.

Another path for the dissemination of passages from Galen's work among a Jewish readership has been neglected until recently, but calls for further investigation: excerpts from Galen's works that were read in Arabic by authors who then rendered them into Hebrew for inclusion in their works. The example noted here—that of the philosopher and physician Shem Tov ibn Falaquera (1224–1290)—is a significant one.

As a physician, Falaquera was undoubtedly familiar with the Galenic corpus circulating in Arabic around the Iberian Peninsula during the thirteenth century, as well as with the work of eminent Arab authors. In fact, his knowledge on the matter surfaces in a passage of his *Sefer ha-Mevaqqeš(Book of the Seeker*),where, through a dialogue between "the seeker" and a prominent physician, Falaquera provides a list of authors essential for acquiring adequate medical knowledge. The list, unsurprisingly, includes Hippocrates, Galen, Ḥunayn ibn Isḥāq, al-Rāzī, Isḥāq ibn Sulaymān al-Isrā'īlī, al-Zahrāwī, and IbnRushd.[36] Falaquera's quotations of Galen's works, however, are mainly found in his ethical and philosophical works.[37]

The encyclopaedia *De'ot ha-philosophim* (*The Opinions of the Philosophers*) is Falaquera's most extensive work. Written around 1270, it is divided into two books, one

[36] Caballero-Navas (2011: 236-7).

[37] It is relevant to note that no ethical-philosophical works by Galen were translated into Hebrew (Lieber 1981: 167-8). Thus, these quotations are the only Hebrew translations of Galen's such works so far identified.

on natural beings and the other on divine beings. The first and longest one is organised into seven parts, while the second book consists of three. He says in the introduction to this work that it is a compendium of the authoritative opinions of the philosophers. In fact, he often reproduces long excerpts from other authors' works almost verbatim. Just as often, however, he seems to forget to mention his sources.[38] Nonetheless, Zonta has identified a lengthy quotation from Galen's *On My Own Opinions*.[39]

Zonta's analysis of Falaquera's ethical-philosophical works has resulted in the identification of many other passages from different Galenic works, prominently *Character Traits*, but also *Exhortation to the Study of the Arts* and *Avoiding Distress*. He even suggests that quotations that could not be identified might have been taken from one of Galen's lost ethical-philosophical writings, basing this view on the issues they address andon certain doctrinal or historical notes they contain.[40] Both the *Sefer ha-ma'a lot* (*The Book of Degrees*)—a short treatise in three parts, each devoted to describing the three degrees into which man is divided, according to a Platonic model[41]—and *Iggeret ha-ḥalom* (*Treatise of the Dream*)—organized as two sections, one on the well-being of the body and the other on the well-being of the soul[42]—contain numerous quotations from *Character Traits*. As in *De'ot ha-philosophim* (*The Opinions of the Philosophers*), Falaquera does not explicitly mention Galen as the author of his quotations. In fact, as noted, he rarely mentions his sources, and when he does, he generally attributes the citations to Plato or to a "wise man". Still, Zonta's study reveals that the main source is the Arabic version of Ḥunayn ibn Isḥāq from *Character Traits*.[43]

[38]Jospe (1988: 46-8); Zonta (1995); Harvey (2000: 211-47).
[39] Zonta (1995: 26).
[40] Zonta (1995: 30-1).
[41]Jospe (1988: 42-6); Zonta (1995: 23-4).
[42]Jospe (1988: 61-2); Zonta (1995: 24-5).
[43] Zonta (1995: 29-30).

Falaquera's quotations follow two different patterns: they are either rather literal, with some minor textual variants notwithstanding, or they are reformulations of a passage that preserve tenuous links with the Arabic manuscript tradition. As noted above, Zonta suggests there are also quotations that do not correspond to Galen's extant works, but that may belong to lost works.[44]As mentioned, *Sefer ha-ma'a lot* also contains several quotations from *Exhortation to the Study of the Arts,* which is cited following the two above-mentioned patterns, that is, literally or through reformulations, and without explicit acknowledgment of the source.[45]The short ethical treatise *Iggeret ha-musar* (*Treatise on Ethics*) also includes an excerpt from *Exhortation to the Study of the Arts*.[46] Finally, the likewise short treatise *Ṣeri ha-yagon* (*Balm of Sorrow*), which belongs to the "consolation" genre, contains a quotation from *Avoiding Distress*.[47]As the comparative table compiled by Zonta shows quite graphically, excerpts and quotations extracted from the Arabic versions of Galen's works and included in Hebrew treatises form a network of partial translations that constitute an indirect but very effective mode of transmitting scientific knowledge.[48]

2. The translation of Galenicand pseudo-Galenicworks into Hebrew

During the twelfth century, Hebrew became the language into which scientific and medical works were translated and in which they were copied, commented on, andt o a lesser degree, composed in the Mediterranean West. In the first stage of this movement,

[44]Zonta (1995: 30-1).
[45]Zonta's study includes a table with quotations from *Iggeret ha-ḥalom* and *Sefer ha-ma'alot* from *Character Traits* and *Exhortation to the Study of the Arts*, and a parallel Hebrew-Arabic edition and commentary of the excerpts; see Zonta (1995: 32-93).
[46]Zonta (1995: 25)
[47]Jospe (1988: 34-5); Zonta (1995: 22, 27-28); Salvatierra Ossorio (2010: 187-200).
[48]Zonta (1995: 32-80; 82-123).

the efforts of Arabic-speaking Jewish authors engaged in the large-scale appropriation of science and Greco-Arabic philosophy began rendering texts on Jewish religious philosophy into Hebrew in order to make them accessible to their coreligionists in the northern Iberian Peninsula and southern France. The second stage entailed the incorporation of non-Jewish authors into the repertoire of texts translated and disseminated in Hebrew.

Both Hebrew science and philosophy depended heavily on Arabic culture from the first moments of this movement until the fourteenth century. A considerable part of the large number of treatises written in Hebrew consisted of translations of works originally written in Arabic or translated into Arabic from Greek. This does not mean Latin texts were ignored. Early on during this period, the number of scientific works rendered from Latin was very small, but the numbers increased in the subsequent centuries due to the admiration of a minority of Jewish intellectuals for Latin science and culture. This general trend was more pronounced in the field of medicine, thanks to the early demand for Latin texts by Jewish doctors. Gad Freudenthal has compared translation trends and numbers from Arabic and Latin into Hebrew, concluding, "The rise of medical translations from Latin reflects an increasing involvement of Jews in modern ('bookish') Galenic medicine"; due to this, he asserts, "Jewish physicians were under pressure to accommodate cutting-edge Latin medicine".[49]

The translations from the Galenic corpus encompassed a wide range of formats, including treatises, summaries, and adaptations, and incorporated works from antiquity wrongly attributed to Galen (see Appendix). The first systematic translation of medical texts into Hebrew was made not from Arabic, but from Latin, when an anonymous

[49]Freudenthal (2010: 129, n. 13).

translator from Provence, using the pseudonym Do'eg the Edomite, translated twenty-four medical works between 1197 and 1199. Moritz Steinschneider, the first to analyse each of these translations and establish their dates, argued that the Latin texts Do'eg selected and translated had been studied in Salerno.[50] In fact, Do'eg appears to have rendered the basic elements of the *Articella* into Hebrew. The inventory of works Do'eg lists in the introduction to his impressive translation project, heavily grounded in the "Arabic Galenism" that permeated Western medical Latin culture in the twelfth century, was edited by Steinschneider and reproduced in English by Ron Barkai and more recently by Freudenthal.[51]

The list of Do'eg's includes six Galenic and pseudo-Galenic titles that were translated from Latin into Hebrew: *Isagoge Iohanicci ad Tegni Galieni* (*Ḥunayn's Introduction to the Art of Galen*, i.e. a Latin translation of an Arabic introduction to Galenic medicine) by Ḥunayn ibn Isḥāq; *Microtechne*(*Little Art*, i.e. the medieval name for *Art of Medicine*) by Galen; *Aphorisms* and *Prognosticon,* by Hippocrates, both including Galen's relevant commentary; *Passionarius,* which Do'egattributes to Galen but was written by Gariopontus; and *Sefer ha-'em*(*Book on the Womb*)ascribed to Galen, which is the Hebrew translation of the anonymous work *De passionibus mulierum* B, an eleventh-century pre-Salernitan Latin treatise originated from a previous version (known as A)and the late antique Latin gynecological treatises by pseudo-Cleopatra and Muscio.[52]

The first Hebrew translation of a medical book from Arabic was dedicated to Galen. In 1199, Samuel ibn Tibbon, who lived and works in Béziers, translated Galen's *Microtechne* from Ḥunayn Ibn Isḥāq's Arabic version (*al-Ṣinā'a al-saġīra*)with a

[50]Steinschneider (1893: 711-14).
[51]Steinschneider (1888: 6-8); Barkai (1998: 21-7); Freudenthal (2013: 118-20).
[52]This has been edited and translated into English by Barkai (1998:145-80). See also Green (2000: 29).

commentary by Ali ibn Ridwān.[53] Shortly thereafter, around 1200, and apparently in Provence, Judah al-Ḥarizi translated two pseudo-Galenic works best known by their Latin names, i.e. *De prohibenda sepulture* (*Book on the Ban of Burying, Compendium by Abu Sayyid 'Ubaydallah*), and *De anima*(*On the Soul*).[54]

After this early activity translating Galen, no other renditions were produced until the second half of the thirteenth century. The translations up to the end of that century, except for two, were from Arabic. In 1257 (or 1267), Moses ibn Tibbon translated Maimonides' Arabic *Commentary on the* "*Aphorisms*" *of Hippocrates* (*Sharh fuṣūl Abruqrāt*), in which Maimonides followed Galen's interpretations and observations to a large extent.[55] The interest aroused by this work among Jewish audiences can be measured by the fact that twelve manuscript copies of this translation are extant and that the work was later translated from Arabic two more times, once by Zeraḥiah ben Isaac Ḥen around 1277–90 in Rome and then by an anonymous translator sometime in the fourteenth century.[56] Moses ibn Tibbon also translated *Introduction to Galen's "Art of Medicine"* by Ḥunayn ibn Isḥāq from the Arabic in 1283 or earlier.[57]

Four translators active in Italy conducted their outstanding work during the thirteenth century: Hillel ben =Samuel, Nathan ha-Me'ati, his son Solomon ben Nathan ha-Me'ati, and Zeraḥiah ben Isaac Ḥen. Hillel ben Samuel translated Ali ibn Ridwān's commentaries on Galen's *Tegni* or *Ars Medica* (Art of Medicine) from the Latin version by Gerard of Cremona around 1260. He also translated Galen's commentaries on the

[53]Steinschneider (1893: 734); Zonta (2011: 24).
[54]On the former, see Steinschneider (1893: 656-7);and Zonta (2011: 24).On the later, see Steinschneider (1893: 273-5), Jellinek (1852), and Fichtner (2017) 174.99.To date, Jellinek's is the only existing edition of the Hebrew version together with the translation to a modern language (German).
[55]Steinschneider (1893: 769); Zonta (2011: 32).
[56]Steinschneider (1893: 769); Zonta (2011: 35 and 46).
[57]Steinschneider (1893: 711); Zonta (2011: 37).

Hippocratic *Aphorisms* from the Latin version by Constantine the African.[58]Apart from translating Maimonides' *Commentary on the Aphorisms*, Zeraḥiah ben Isaac Ḥen also translated from the Arabic *Kitab al-ʿIlalwa-l-aʿrāḍ* (*Book on Diseases and Their Symptoms*),*On the Composition of Drugs according to Kind*(books I-III), and *On the Regimen of Health*between 1277 and 1290.[59] Nathan ha-Me'ati translated medical texts exclusively, contributing many Greek works to the Hebrew medical library, such as Galen's*Commentary on Hippocrates' Prognosticon* (*Kitab Buqrāṭ fī Taqdimat al-maʿrifa*) around 1280, and his *Commentary on Hippocrates' Aphorisms* (*Tafsīr Kitab Fuṣūl Buqrāṭ*) in 1283.[60]Solomon ben Nathanha-Me'ati translated an epitome of Galen's *Commentary on Hippocrates* "*Airs, Waters, and Places*" (*Tafsīr Kitab Buqrāṭ fī l-Ahwiyawa-l-buldān*) from the Arabic in 1299.[61]

During the fourteenth century, the number of translations from both Arabic and Latin increased. A number of anonymous translators rendered into Hebrew Maimonides' *Commentary on Hippocrates' Aphorisms*, *Treatise on Phlebotomy* (Latin), *Advice to an Epileptic Boy* (Arabic), *Compendium of Galen's Works on Urine* (Arabic), *Isagoge Iohanicci ad Tegni Galieni* (Arabic), and the pseudo-Galenic *On Melancholy* (Arabic).[62]

In Barcelona, Boniac Salomo translated Galen's *Kitab al-Buḥrān* (*Book of Crisis)* from the Arabic at an undermined date.[63] Between 1307 and 1308 in Provence, Qalonymos ben Qalonymos translated Galen's *Kitab al-Ḥuqan* (*Book on Clyster and*

[58]Steinschneider (1893: 734, 788).Zonta (2011: 32). Zonta does not mention the translation of *Tegni*.
[59]See Zonta (2011: 35-6). Steinschneider (1878: 197-9) offers an edition of 11Ḥen's introduction to his translation from an apparently lost Arabic source of *On the Composition of Drugs according to Kind*. See also Fichtner (2017) 406.147. *On the Regimen of Health*, whose Arabic source is neither extant, was edited and translated by Bos and Garofalo (2007: 43-95).
[60]Steinschneider (1893: 662); Zonta (2011: 38).
[61]Steinschneider (1893: 662); Zonta (2011: 36, 38); Wasserstein (1982).
[62]Steinschneider (1893: 655); Zonta (2011: 44). For the *Compendium on Urine*, see Fichtner (2017) 127.89. See also the very interesting discussion on Hebrew uroscopic literature in Visi (2016:164-5).
[63]Steinschneider (1893: 652); Zonta (2011: 43); Fichtner (2017) 67.54.

Colic) and *Kitab al-Faṣd* (Treatise on Phlebotomy)[64] and in 1322, Shimshon ben Shlomo translated the *Alexandrian Compendia of Galen's Sixteen Works* from Ḥunayn's Arabic version.[65]Much research has been done on some treatises since Lieber published her work on Galen in Hebrew, which devoted a segment to the transmission of the summaries among Jews.[66]Most of it has examined *On Critical Days*, recently edited and translated by Bos and Langermann.[67]There also Hebrew summaries of the following works: *De empiricis et methodicis,*[68] *Microtegni, De elementis et humoribus,*[69]*On Mixtures, On the Natural Capacities, On Black Bile, On the Preservation of Health, On the Different Kinds of Fever, On Marasmus, On Pulse for Beginners, On Crises, On Critical Days,* and *On Urines (Pseudo-Galen).*[70]

Sometime before 1337 in Provence, David ben Abraham Caslari of Besalú produced a Hebrew version of Galen's *On the Anomalous Dyskrasia* from Latin. A recent study examines the translation of Galen's original Greek text into Arabic by Ḥunayn in the ninth century, the translation of Ḥunayn's text into Latin by Gerard of Cremona in the later twelfth century, and the translation of Gerard's version into Hebrew by David Caslari.[71]At the turn of the fourteenth century, around 1392–1402, Leon Joseph of Carcassonne did a translation from Latin (or Arabic) of the pseudo-Galenic *On Prognosis Based on the Hour When a Patient Goes to Bed Based on the Science of Astrology*, equivalent to the pseudo-Hippocratic *De esse aegrotorum secundum lunam*.[72] Finally, the

[64]Steinschneider (1893: 552-3); Zonta (2011: 49).Fichtner (2017) 194.102-3, and 73.59, respectively.
[65]Steinschneider (1893: 654-6); Zonta (2011: 56).
[66]Lieber (1981: 168-71).
[67]Langermann (2008b).The editors, i.e. Bos and Langermann, list six extant manuscripts (2014: 88-9).
[68]See Fichtner (2017) 4.10-1.
[69]See Fichtner (2017) 8.14-5.
[70] See above note 62.
[71]Steinschneider (1893: 653); Zonta (2011: 58); Ferre (2012: 67-70); Bos, McVaughand Shatzmiller (2014).
[72]Steinschneider (1893: 666); Zonta (2011: 62).

same work was also translated into Hebrew from Latin in 1406 by Tanḥum ben Moses of Beaucaire, in Italy.[73]

3. Conclusion

The relationship between the medieval Jews and the Galenic corpus was intense. Jews from Islamic milieus, who had participated from the beginning in the processes of transmission and appropriation of Greek science and philosophy in a multicultural context, were highly familiar with Arabic Galenism. They had access to both Galenic works and medieval Arabic and Latin writings highly influenced by Galen, and even contributed their own Galenised works, to a lesser degree. These 'Galenised Jews', who partook of the Arabic cultural tradition, were the first and main mediators to bring to light and pass on this wealth of knowledge to their coreligionists in the north.

The Iberian Peninsula—where the borders fluctuated and contact between two distinct cultural areas, al-Andalus and the Christian kingdoms, became increasingly frequent—was the ideal breeding ground for sparking curiosity about Greco-Arabic knowledge among those still unaware of it. This initial stage was followed by a large-scale appropriation of Greco-Arabic knowledge by the Jewish communities under Christian rule in northern Spain and southern France and shortly thereafter in Italy. Galenic treatises, adaptations, and summaries were among the first texts translated into Hebrew, both from Arabic and from Latin, coinciding with the Arabic-into-Latin movement.

These translations continued to be produced until the fifteenth century, and although not great in number, they overlapped with other modes of transmitting portions

[73]Steinschneider (1893: 666-7); Zonta (2011: 65).

of the Galenic corpus. Western Jews were the recipients not only of the Galenised contents of the Arabic and Latin texts rendered into Hebrew,[74]but also of longer and shorter passages of different Galenic and pseudo-Galenic treatises through quotations. These quotations of partial and abridged translations into Hebrew stemmed from two main sources: Arabic texts authored by Jewish writers who had cited whole fragments and works originally written in Hebrew whose authors had included quotations from texts generally quoted from the Arabic versions. Actual fragments of Galenic works continued to circulate among Western Jews until the end of the Middle Ages and beyond.

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[74] Although out of the scope of this essay, it is relevant to note that, inasmuch as a minority of learned Jews was proficient enough as to translate from Latin into Hebrew by the fourteenth century, they were also able to read Latin works. Witness to this practice is the Hebrew signature found in a Latin manuscript dated to the late thirteenth/early fourteenth century, which contains Latin versions of six of Galen's medical treatises; see Hartman (2013: 239-48).

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