

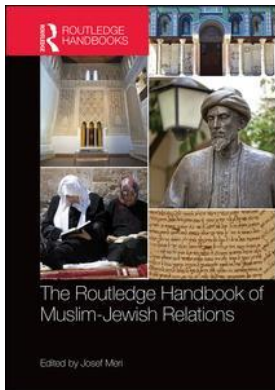
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## The Routledge Handbook of Muslim–Jewish Relations

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### Medicine

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## Medicine

### The reception and practice of rationalist medicine and thought in medieval Jewish communities, east and west

*Paulina B. Lewicka and Gad Freudenthal*

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The objectives of medicine, the art of healing suffering human beings, are shared by all of humanity. The internal logic of medicine does not depend on prejudice or on cultural premises; it is perforce universal. In his *The Merchant of Venice* (3:1) William Shakespeare wrote (1598):

I am a Jew. Hath not a Jew eyes? hath not a Jew hands, organs, dimensions, senses, affections, passions? fed with the same food, hurt with the same weapons, subject to the same diseases, healed by the same means, warmed and cooled by the same winter and summer, as a Christian is? If you prick us, do we not bleed? if you tickle us, do we not laugh? if you poison us, do we not die?

The human body being the same whatever the religion followed by the person inhabiting it, the art and science of medicine are a cultural good that is shared cross-culturally more easily than other lore. This implies two things: On the level of medical treatment, patients will tend to seek advice from the best physician available, without regard to his (or her) religious identity; and on the level of the cross-cultural transfer of ideas, medical knowledge will tend to be more easily transferable from one culture to another.

In this chapter we will attend essentially to Muslim-Jewish relations on the level of medical theory and practice. This is the domain of natural knowledge in which the interaction was most intensive. In the conclusion, a few words will be said about Jewish-Muslim contacts on the level of science.

The first part will explore the topic in Islamic society: Jews living in Dār al-Islām spoke, read, and wrote in Arabic and were integrated in the majority society both culturally and physically; describing medicine in this cultural setting thus means describing one aspect of what some scholars have called the “medieval Jewish-Muslim symbiosis.” Here Jewish-Muslim interaction involved real human beings who encountered one another in an unending succession of real-life situations and who shared the same body of knowledge. The second part of the chapter bears on Jewish-Muslim relations in the realm of medicine in Christian Europe. Here Jews, usually not knowing the cultural language of the majority

culture (Latin), depended on Hebrew translations of medical (and other) works, which (until the fifteenth century) were mostly translated from Arabic. The lively translation movement that emerged in southern France and Italy between the twelfth and the fifteenth century thus, in a way, prolonged the “cultural symbiosis” of the earlier centuries, albeit in a purely bookish, not personal, mode. Nonetheless, as we will see, this interaction has been very consequential.

### **The Jewish physician in the Islamic Eastern Mediterranean of the Middle Ages: an overview**

Throughout almost all of the Middle Ages,<sup>1</sup> Jewish physicians constituted a sizable group of medical practitioners and scholars living and working within the Muslim society of the Near East.<sup>2</sup> As a group of professionals, they formed a rather diverse microcosm. Some were esteemed authorities in the field of medicine, celebrated for their knowledge and authorship of books, while others served as doctors to caliphs and sultans. Apart from those who achieved social prestige and rank, there was also a crowd of Jewish physicians who did not become famous. They lived their ordinary daily lives in ordinary neighborhoods of Iraq, Syria, and Egypt and earned their income by attending to ordinary patients.

It is impossible to say how numerous they were altogether as we know only those whose names were, for various reasons, immortalized in Arabic, Judeo-Arabic, or Hebrew records.<sup>3</sup> In Egypt, where “the Jewish community harbored a disproportionately high percentage of physicians, druggists, and traders in spices and pharmaceuticals (...),”<sup>4</sup> they might have been more numerous than elsewhere in the Islamic Near East. In the period between the tenth and thirteenth centuries, one could find a Jewish doctor, and often more than one, in many Egyptian towns and villages. Not surprisingly, the competition between them was sometimes quite fierce.<sup>5</sup> This must have been the case also in later centuries when the popularity of Jewish physicians seems to have remained quite high. If we are to believe one Sufi author, their medical services were so widespread in sixteenth-century Egypt that even Muslim theologians and other religious individuals sought medical advice from Jewish physicians and occasionally even asked them for help in circumcising their sons.<sup>6</sup>

Prominent or ordinary, gifted or average, they all belonged to the entity that, in the Arabic-Islamic discourse of the Middle Ages, was called *ahl al-dhimma*, or the “protected” non-Muslim communities. Jewish doctors shared this particular affiliation with their Christian colleagues, for which reason it is generally impossible to differentiate between the two groups or to separate one from the other whenever the term *dhimma* is used in the Arabic text related to medical professionals. The essence of the concept that *ahl al-dhimma* constitute an inferior category of human beings was its opposition to the good and superior Muslim community, alongside which it existed within the framework of the Islamic world. Ironically enough, this categorization contributed to the fact that Jews, together with their Christian colleagues, favored medicine as a profession and in time came to dominate medical culture of the Islamic Near East.<sup>7</sup> In fact, this particular inclination of the Near Eastern Jews and Christians was motivated not only by their personal predilections but also by the status they enjoyed as non-Muslims living within the Muslim environment. Provided they paid the poll tax, known as *jizya* (see Chapter 1, this volume), Jews – more frequently than Christians<sup>8</sup> – were generally left unbothered and could live a relatively normal daily life. Being *dhimmi*s, however, they could also be obligated to follow discriminative and humiliating regulations that were issued from time to time by Muslim rulers. Such regulations generally corresponded to those listed in the so-called covenant or pact of ‘Umar, a law that, very roughly speaking, imposed on

non-Muslims restrictions referring to dress, transport, religious practices, architecture, and social behavior. Besides, *dhimmi*s could not compete for power, nor could they occupy any of the high-ranking governmental positions.<sup>9</sup>

Under such circumstances, medicine constituted one of the very few fields in which a Jew or a non-Muslim in general could acquire a rank, prestige, and position of respect in the Muslim world. This was possible for two main reasons. First, the medical system that prevailed in the medieval Islamic Near East was impartial, universal, and free of theology.<sup>10</sup> Based on ancient Greek foundations or, more precisely, on the Hippocratic-Galenic doctrine of humoral pathology,<sup>11</sup> it had been imported to the Arabic-Islamic world in the course of the eighth and ninth centuries, when the Nestorian Christians, sponsored by the elites of the early ‘Abbāsīd Baghdad, translated the ancient Greek legacy into Arabic. Although with time many of its elements got confounded and differed from the Greek original, the humoral doctrine successfully blended into the multicultural Arabic-Islamic world, where it became not only a prevailing medical system<sup>12</sup> but also a kind of lingua franca, a common jargon mastered, above all, by the cultured urbanites – and not only by them.<sup>13</sup> Within the framework of this system, using religious denomination to question a doctor’s professional competence seemed unthinkable. The religious divides notwithstanding, when it came to medical care the good reputation of a physician, and the respect he commanded, counted most of all. That was why Jewish and Christian doctors could work in Muslim hospitals and attend to Muslim sick in their homes.

Besides, as far as medical domain was concerned, Jews and Christians were, paradoxically enough, in a privileged position, which was caused by the relatively common belief that Jewish and Christian doctors were more likely to heal the sick than Muslims, who were apparently not considered successful in medicine.<sup>14</sup> This belief, dating back to early ‘Abbāsīd times, was strong enough to persist in the Near East throughout the medieval period, although with time the patients’ preferences switched from Christians to Jews. “Down in Cairo, if a physician is not an old Jewish shaykh with his neck bowed and the saliva spilling from his mouth, the Cairene women would not seek an advice from him!” – Muḥammad Ibn Muḥammad, a Muslim physician of sultan al-Nāṣir Muḥammad (r. 1310–1341, third reign) was to say when a colleague suggested he sits in the pharmacist’s shop and attends to patients, thus earning a reasonable income.<sup>15</sup>

But medicine allowed a doctor much more than securing an agreeable income. In the medieval Arabic-Islamic world, where knowledge was considered the most precious of treasures and where medicine was perceived as one of the noblest fields of knowledge, the medical profession offered many possibilities of intellectual satisfaction. One could, for example, seek fulfillment in scholarship or in teaching. One could also write or collect books. The respect for books that prevailed in the Arabic-Islamic world turned them into “emblems of prestige” for those who possessed them,<sup>16</sup> for those who knew them, and for those who produced them. Moreover, books – like one’s students, children, or works of art – had an immortalizing power that made one go down in history. “I left four books which will perpetuate my memory better than children, my treatises *On Fevers*, *On Remedies and Aliments*, *On Urine*, and *On Elements*”<sup>17</sup> said the famous Iṣḥāq al-Isrā’īlī when asked why he never married and had no children. Hence the reason that so many physicians – Jews and non-Jews alike – wrote on medicine, dietetics, and pharmacology, apart from their daily medical practice. In fact, they rarely produced original works, since the medical system that prevailed in their world was complete and could hardly be amended or developed.<sup>18</sup> Rather, they intensely compiled, summarized, or commented on medical works of earlier authors: While browsing through historical records referring to Jewish doctors, we rarely find a

physician who was not an author of a medical work. In fact, many of them wrote more than one book in their lifetime.<sup>19</sup>

A suitable income, intellectual satisfaction, and fame were not all that medicine might provide. Spiritual comfort and a sense of material security were important, but the ethos of the medical profession, the satisfaction that one could get from helping others or the reward that resulted from treating a poor person for free,<sup>20</sup> were also meaningful. Those who were ambitious could also try to work their way up. If one was smart enough to find a job around a ruler or a powerful Muslim of rank, one could also grow rich or obtain a position of influence, or both. As for winning over a generous employer, Isrā'īl Ibn Zakariyyā al-Ṭayfūrī was probably the most fortunate of all the Jewish doctors in the entire medieval Near East. The 'Abbāsīd caliph al-Mutawakkil, whom al-Ṭayfūrī served, made his physician enjoy fairytale riches: He paid al-Ṭayfūrī enormous sums of money, granted him a lot of land in his new capital Samarra, and even allowed him to demonstrate his uniquely privileged status: Al-Ṭayfūrī's retinue, which included an armed guard moving in front of him, was said to have been as gorgeous as that of the highest army commanders.<sup>21</sup>

But not only 'Abbāsīd rulers employed Jewish physicians, and they were not unique in being generous.<sup>22</sup> The medical services of Jews were even more popular in the court of the Fāṭimid caliphs (909–1171). Of the numerous Jewish doctors who served them, the most eminent was certainly Iṣḥāq Ibn Sulaymān al-Isrā'īlī, "the greatest Jewish medical man of the Middle Ages."<sup>23</sup> Al-Isrā'īlī, inherited by the Fāṭimids from the Aghlabid dynasty, was kept in his post of royal doctor by three of the Fāṭimid rulers.<sup>24</sup> The example of the first Fāṭimids was followed by many, if not by all, of their successors. After the fall of the Fāṭimids, the four Jewish doctors who worked for the last caliphs of this dynasty were taken over by Saladin, the founder of the Ayyūbid dynasty (1171–1250), whose coup of 1170 introduced a new order in Egypt. All in all, sultan Saladin employed eight Jewish physicians in his service, one of whom was Mūsā Ibn Maymūn, known as Maimonides; he became a celebrity in his lifetime and his fame has been flourishing since.<sup>25</sup> Jewish physicians also served Saladin's son 'Uthmān,<sup>26</sup> his nephew sultan al-Kāmil Muḥammad,<sup>27</sup> and a number of local Ayyūbid princes in Syria and Iraq.<sup>28</sup>

All in all, the medical profession significantly softened the intercommunal divides and allowed Jewish as well as Christian doctors to cope with the inconveniences and difficulties resulting from the status of the *dhimmī*. However, it did not automatically abrogate such restrictions. Whatever their proficiency and achievements in medical arts, the fact that Jews belonged to the non-Muslim community always influenced their fate. Generally the status of Jews was much less problematic than that of Christians, if only because the Near Eastern Jews had nothing to do with the theological-political-military tensions that characterized relations between Muslims and local Christians.<sup>29</sup> Nevertheless, due to their *dhimmī* category, Jewish physicians could hardly avoid traps of intercommunal tensions.<sup>30</sup>

Obviously enough, the significance of the religious affiliation of Jewish physicians varied considerably in different places and at different times, and their situation differed accordingly. Until the rise of the Ayyūbid dynasty in the late twelfth century, the Near Eastern Jewish doctors appear to have had relatively little reason for complaint about their life under Muslim rule. The Ayyūbids, however – although quite open in matters related to the religious affiliation of their personal physicians – were not able to separate medicine from the religious and political circumstances that, in their times, started to prevail in the Near East. Consequently, the first serious symptoms of the radicalization<sup>31</sup> of Islam that occurred under their rule were accompanied by attempts to Islamize medical culture, a process that resulted in undermining the universality of medicine and its interfaith character.<sup>32</sup>

Islam's interference in medicine was not very evident in the beginning, and the results of this process were rarely felt by the Jewish physicians. Nevertheless, a number of events marked the coming of new times for them as well. It was under the rule of Saladin that al-Muwaffaq Ibn Shū'a (d. 1183), the famous Jewish scholar, physician, surgeon, and ophthalmologist in the personal service of Saladin, was hit by a stone thrown by a zealous *faqīh*, Sufi named al-Khūbishānī. Al-Khūbishānī was obsessed with non-Muslims riding on horse- or mule-back, which Jews and Christians living in the Islamic world were forbidden to do on the basis of a sumptuary law known as the pact of 'Umar (see Chapter 1, this volume). However, doctors quite often *had* to ride, if only to visit their patients in faraway places.<sup>33</sup> Christians and Jews generally avoided al-Khūbishānī who, whenever he spotted a non-Muslim riding, assaulted and tried to kill him. Unluckily for Ibn Shū'a, his ride in the streets of Cairo did not escape al-Khūbishānī's notice. The stone the latter threw cost the royal doctor his eye.<sup>34</sup> A very similar incident was recorded some decades later in Yemen, where one Muḥammad al-Ma'ribī, a pious and noble Yemeni *faqīh* (d. ca. 1240–1241), furiously attacked a Jewish physician, who rode a fine mule and was accompanied by a number of servants. Al-Ma'ribī threw the doctor down from the mule, took off his shoe, and severely beat him with it. He did so, as he himself put it, because the doctor "exceeded the limits of what was allowed to him and by doing this he deprived himself of the protection of the Islamic law and deserved humiliation."<sup>35</sup>

But one did not have to use physical violence to fit the new currents. Raḍī al-Dīn al-Raḥbī (d. 1233), the famous Damascene physician and a professor of medicine who educated many successful and famous doctors, manifested his attitude in a passive way: Throughout his entire life, he successfully avoided teaching medicine to a *dhimmī* and was very proud of this. He made only two exceptions: He taught medicine to one Jewish and one Samaritan student, which weighed heavily on his conscience.<sup>36</sup> Others expressed their *Weltanschauung* in writing, as was the case with a certain al-Jawbarī (fl. 1222), a Syrian dervish, alchemist, and the author of a rather coarse work on fraudulent practices of all sorts. Some parts of his manual, which is titled *Kashf al-Asrār* ("Revealing of Mysteries"), deal with Jews as medical charlatans and physicians and include information on how they kill their non-Jewish patients whenever they have a chance.<sup>37</sup> It should be stressed, however, that such offensive and irrational accusations were rarely addressed exclusively against Jews or Christians. Usually, they referred to *dhimmī* doctors as such.<sup>38</sup>

All this was, so to speak, a new value in the medical discourse of the Arabic-Islamic Near East. While in the Ayyūbid times this value was voiced mostly by zealous religionists, it gained a new dimension under the Mamlūks, who made it into an element of the politics of the state. Pressed by radical and influential theologians, Mamlūk rulers issued a number of decisions that encouraged the process of Islamization of medical culture and sanctioned a diminishing role of Jews and Christians in it. The earliest of these decisions involved the endowment deed (*waqfiyya*) for sultan Qalāwūn's hospital, a document which was composed in 1286 and which specified that non-Muslims were neither to be treated in nor employed by this institution.<sup>39</sup> As for the ban on being treated in this Cairene star hospital, it could not be of any significant concern to Jews, for they probably would not go there anyway. So, at least, may be guessed from the observation of S. D. Goitein, who noticed that "while the Geniza makes repeated references to Jewish doctors working in hospitals, it never mentions Jewish patients availing themselves of this service."<sup>40</sup>

For Jewish physicians, however, the hospital was an important career step, and the ban on employment in this institution mattered a lot to them. For young, promising, and ambitious students, an internship in a hospital was very much sought after.<sup>41</sup> For experienced

and prominent doctors, a job in a hospital was, apart from the fulfillment of professional aspirations, also a mark of prestige. With the new, well-subsidized building of the Qalāwūn's hospital closed for them, some Jewish doctors might have faced a choice of abandoning their ambitious plans or converting to Islam.

However, the endowment deed for Qalāwūn's hospital did not stop his son and successor, sultan al-Nāṣir Muḥammad, from employing Jewish physicians in his own service.<sup>42</sup> One of them, Usayda (d. after 1327), “a little lioness” as he was called, had no equals in setting broken bones and performed significant surgeries on some high-ranking Mamlūk officers.<sup>43</sup> Sultan al-Nāṣir Muḥammad not only used services of Jewish doctors but also sent one of them as a gift to a Yemeni ruler – together with Turkish mamlūks, horses with saddles, slave girls, clothing, food, scents, and the like.<sup>44</sup> Nevertheless, the *waqfiyya* for Qalāwūn's hospital contributed to the call for ousting Jews and Christians from the medical culture of Dār al-Islām and paved the way for two later decrees prohibiting Christians and Jews to practice medicine, of which one was issued in 1354 and the other in 1448–1449.<sup>45</sup> The decree of 1354 apparently constituted an outcome of the campaign of persecution that was unleashed that year against Coptic scribes under the sultan al-Ṣāliḥ Ṣāliḥ (r. 1351–1354).<sup>46</sup> The decree of 1448–1449 was produced during the days of sultan al-Zāhir Jaqmaq (r. 1438–1453) who, suffused with religious zeal, seemed to have masterminded and implemented a kind of moral revolution in mid-fifteenth-century Cairo.

Whatever the reasons behind these decisions, they were not followed blindly, which was not unusual for the Near Eastern mentality. Although they implied that whoever wanted to work as medical practitioner had to convert to Islam, the number of conversions among Jewish doctors does not seem to have increased significantly. True, the path to ambitious goals and success almost invariably included conversion, and some chose to change their faith rather than give up their career. This must have been the case of Ibn al-ʿAfīf who, while one of the Jewish physicians of sultan al-Ashraf Barsbāy (r. 1422–1438), converted to Islam because it was apparently required for getting the position of chief physician of the Qalāwūn's hospital in Cairo.<sup>47</sup>

Due to the fragmentary and ambiguous character of historical records, it is of course impossible to establish a precise number of Jewish physicians who converted to Islam. Yet no matter how numerous they were, Jewish physicians who decided to change faith in fourteenth- or fifteenth-century Egypt or Syria were not, as it is sometimes suggested, victims of religious persecution who converted “in order to escape death or economic ruin.”<sup>48</sup> True, by the thirteenth and fourteenth century “the religiosity turned into bigotry,”<sup>49</sup> and Egypt ceased to be the welcoming and hospitable haven for Jewish refugees from Europe which it was in Maimonides's days, but there was no persecution of Jewish doctors and no Jewish doctor left his Egyptian or Syrian home.

Be that as it may, from the Mamlūk times on, neither Jewish nor Christian physicians were welcomed among the elite anymore. However, on the everyday level, common sense prevailed, and the two Mamlūk decrees forbidding non-Muslim doctors to practice medicine simply did not work, at least in the case of Jews. Apparently, the pressure to change faith rarely referred to those who were satisfied with ordinary day-to-day life in their neighborhoods and enjoyed the practice of family doctors in their hometowns. In fact, Jews seemed to have prevailed among medical practitioners of late Mamlūk/early Ottoman Egypt (i.e., late fifteenth and early sixteenth centuries) and, moreover, continued to enjoy a good reputation.

It is impossible to make any general observation regarding Jewish physicians' social position or material status in this period. Some, such as Mikhāʿīl, a Jewish physician from Damascus, were living from hand to mouth. Mikhāʿīl was so poor that the head physician of

the Syrian province petitioned the Ottoman sultan (then Ahmet I, r. 1603–1617) to exempt Mikhā'il from paying taxes.<sup>50</sup> However, under the Ottomans many Jewish physicians must have been doing much better. In Egypt, their services were still popular among Muslims, and they continued to enjoy a good reputation, so much so that for Dāwūd al-Anṭākī (d. 1599), “the last great Arab physician,” they stimulated his professional career: Al-Anṭākī decided to practice and teach medicine in Egypt after he saw that the *faqīh*, who was the source of religious sciences, would run to the lowly Jewish physician when it came to medical care.<sup>51</sup>

Besides, the Ottomans' takeover made Jewish physicians sigh with relief, as the Ottomans were much less concerned than the Mamlūks about the regulations related to non-Muslim practitioners. Jews could practice medicine in Ottoman courtly circles until as late as 1574, when a *ferman* ordered that a vacant position among the court doctors could be filled only by a Muslim. Interestingly enough, this was explained by the fact that Jewish physicians at court outnumbered Muslims.<sup>52</sup>

Throughout the Middle Ages, medicine continued to form a bridge over divisions and to soften the intercommunal tensions and antagonisms in the Islamic Near East. No matter how important the influence of religious divides on the cultural climate and the social mood, it mattered little to the desperate patient whether the healer was Muslim, Christian, or Jewish, as long as he could, or was believed to be able to, heal the sick.<sup>53</sup> Such patient-doctor interfaith confidence was possible, above all, because the medical system that prevailed in the medieval Islamic Near East was impartial, universal, and free of theology. Despite the progressing radicalization of Islam from about the mid-thirteenth century on, the hostility toward the religious “other” did not cover the entire medical domain.<sup>54</sup> Within the Near Eastern medical culture, a fragment of a relatively neutral land remained, a particular “community of discourse” within which the Hippocratic-Galenic doctrine shaped common thinking on medicine, health, illness, pharmacology, and diet.

### Muslim-Jewish relations: medicine in Christian Europe

The integration of Jewish physicians and intellectuals generally in Muslim society and culture had strong and lasting repercussions on Jews living in Christian Europe. This part of the chapter briefly describes how the medieval Jewish physicians' close ties to Arabic medicine persevered in some Christian societies long after the real contact to Islamic society ceased to exist. These ties took on two modes, according to whether the Jewish physicians in question knew or did not know Arabic.

In the period under consideration (ninth to fifteenth centuries), Jews lived in two distinct majority cultures: the Muslim-Arabic and the Christian. Their modes of integration in them were entirely different. In the Muslim civilization, Jews spoke the local Arabic vernacular and Jewish intellectuals were conversant in literary Arabic as well. All domains of culture were informed by what some authors have called the “symbiosis” of Jewish and Muslim cultures (see Chapter 1, this volume): the science of language (grammar), poetry, philosophy, law, biblical exegesis, and natural science, including medicine. In all these domains, the bilingual and bicultural Jews wrote in Arabic (or, more precisely, Judeo-Arabic), retaining the use of Hebrew exclusively to the synagogue and to writing poetry. By contrast, the Jews in Christian lands were, as a rule, culturally disconnected from the majority culture: For oral communication they employed the local vernacular, but their only cultural tongue was Hebrew; as a rule, they had no access to Latin writings.

Medicine practiced by Jews under Islam is discussed in the first part of this chapter. Here we will briefly attend to the sequel of this story – namely, the continued ties with and



dependence on Arabic-Islamic medicine of Jews in Christian Europe. We will first consider Jews living in areas that had been under Islamic rule but passed to Christian domination, and then Jew in areas that had never been under Islamic rule even though they had cultural contacts with Arabic-Islamic culture.

Our point of departure is thus al-Andalus, where Jews were strongly integrated into Muslim-Arabic culture from the ninth or tenth century. In the eleventh century, as a result of the so-called Reconquista, Jews increasingly found themselves under Christian rule. (Toledo was taken by Alfonso VI of Castile in 1085.) This did not result in a brusque cultural reorientation toward Christian culture, however. Rather, for a very long period, Judeo-Arabic culture continued to flourish in Christian Spain, where the majority of Jewish intellectuals continued to use Arabic in their cultural production in all disciplines. Only gradually (owing to increased contacts with the Jews of southern France) did the use of Hebrew for secular writing make headway. This continued Jewish bilingualism in Christian Spain naturally had significant effects on the practice of medicine, inasmuch as Jewish physicians (or students of medicine) were able to access works of medicine available in Arabic.

As late as 1305, the noted Toledo astronomer Isaac Israeli (not to be confused with his homonym, the tenth-century physician from Qayrawān) wrote: “[N]o one can practice medicine unless he knows the Arabic language and its form perfectly.”<sup>55</sup> This remarkable perseverance of Arabic culture, specifically of medicine, in a territory that had become Christian no less than two centuries earlier is confirmed by historical research. In an illuminating study of surviving medieval Arabic manuscripts that were written in al-Andalus and subsequently circulated in Christian Spain, Pieter S. van Koningsveld examined how these manuscripts were used within the different communities. He has shown that the scientific and medical Arabic manuscripts were used almost exclusively by Jewish scholars, whereas the interest of Muslim scholars was directed almost exclusively to the traditional religious sciences.<sup>56</sup> It therefore comes as no surprise that in the fourteenth and even fifteenth centuries, Jewish physicians in Castile still wrote medical books in Arabic.<sup>57</sup> We thus conclude that to a large extent Jewish physicians in Christian Spain continued to practice their art in continuity with their forefathers: Jewish medical culture was relatively isolated from the neighboring Latin majority culture and perpetuated its earlier Arabic cultural references.

Consider now the areas in Christian Europe that had never been under Islam. Here the cultural tongue of Jews was exclusively Hebrew and so Muslim-Jewish relations in the field of medicine took on the form of transmission of Arabic medical knowledge into Hebrew. This cultural transmission was part of a much larger process of transfer of Arabic (including Judeo-Arabic) learning into Hebrew: The long process had begun already in the late tenth century and lasted until the middle of the fourteenth century, producing hundreds of Arabic-to-Hebrew translations in all domains of learning. This cultural transmission took place mainly in southern France, also called the *Midi*, as well as in the Italian Peninsula. By contrast, the flourishing Jewish cultures in northern France and Germany concentrated on the religious sphere and were not much concerned by secular learning transferred from Arabic; hence they need not be considered here.

I will now briefly sketch the Arabic-to-Hebrew cultural transfer and then attend to its medical component. Unsurprisingly, the Arabic-to-Hebrew cultural transfer began at the boundary between Judeo-Arabic culture in the Iberian Peninsula and the Hebrew culture in the *Midi*.<sup>58</sup> Arabophone Jewish intellectuals south of the Pyrenees who came into contact with their coreligionists north of them noted the latter’s ignorance in science and philosophy and set out to remedy this situation. Two pioneers need to be mentioned: Abraham Bar Ḥiyya of Barcelona (d. ca. 1136) and the poet, grammarian, astronomer, astrologer, philosopher, and

Bible commentator Abraham Ibn Ezra (d. ca. 1167), both of whom wrote books presenting for the first time Arabic scientific and philosophical thought in Hebrew. The next phase of the cultural transmission began in the mid-1150s, when a considerable number of Arabophone Jewish families arrived in the Midi. This migration was due to the takeover of Muslim Spain by the Almohad dynasty (see Chapter 1, this volume): They withdrew the Jews' and Christians' status as *dhimmīs*, obliging the members of both communities to convert or leave the country. (Moses Maimonides's family, for example, sought refuge in Fez and later in Egypt.) Among the Andalusians who arrived in the Midi were many intellectuals, including the Ibn Tibbon family who settled in Lunel (150 km northwest of Marseilles). The Ibn Tibbons became a dynasty of translators who remained active for four generations: They produced dozens of Arabic-to-Hebrew translations in all domains of knowledge and, no less important, set high standards for precise, literal translations. It should be remembered that Hebrew had hardly been used in science or philosophy, so that both the Hebrew scientific style and the Hebrew scientific vocabulary had to be created almost out of nothing. The Tibbonids gave a decisive "push" to the Arabic-to-Hebrew translation movement, which was to last for about three centuries. It involved many translators in numerous locations and so, contrary to the Greek-to-Arabic and Arabic-to-Latin translation movements, did not depend on any central (political) power: The choices of texts to translate were taken independently by a great number of individuals (the translators themselves or, eventually, their patrons).<sup>59</sup> This decentralized translation activity was possible owing to the existence in the Midi of a considerable number of families in which Arabic-Hebrew bilingualism and biculturalism were maintained for a number of generations. Needless to say, medical books constituted a large share of the translations. The corpus of works that were translated into Hebrew during the entire Middle Ages is admirably described in a monumental work that, although it dates from 1893, is still very far from being surpassed: Moritz Steinschneider's *Die hebraeischen Übersetzungen des Mittelalters*, where the medical translations (from all languages) are described in great detail.<sup>60</sup>

Hebrew translations of medical works began to be written toward the end of the twelfth century. Exceptionally and remarkably, the first set of such translations was made from Latin versions of medical works that had previously been translated from Arabic (mostly by Constantine the African). These Latin versions of works by both Greek and Muslim authors were translated into Hebrew by an exceptional anonymous scholar. He was a learned physician living in the Midi, originally a Jew, who had converted to Christianity but later repented. As a token of remorse, he translated into Hebrew a collection of twenty-four medical books, completed in 1197–1199.<sup>61</sup> His objective was to make available to Jewish physicians up-to-date works of learned medicine that would allow them to compete effectively with their Christian confreres. Among his translations are three titles of Muslim authors:

- 'Alī Ibn al-'Abbās al-Majūsī (Haly Abbas), *Kitāb Kāmil al-Šinā'a al-Ṭibbiyya* = *Kitāb al-Malikī* (translated from the Latin: *Liber pantegni*);
- Ibn al-Jazzār, *Zād al-Musāfir wa Qūt al-Hāḍir* (translated from the Latin: *Viaticum peregrinantis*);
- Ibn al-Jazzār, *Kitāb I'timād al-Adwiya al-Mufrada* (translated from the Latin: *Liber de gradibus*).

In addition, the anonymous scholar also translated from Latin two or three works by Isaac Israeli, which are part and parcel of the same Arabic tradition. The reception history of these translations has not yet been studied.

These Hebrew translations of Latin versions of originally Arabic works are exceptional: In subsequent centuries, works by Muslim authors were translated directly from Arabic and, indeed, some of the anonymous scholar's translations of works originally composed in Arabic were later redone directly from the Arabic originals. The wave of Arabic-to-Hebrew translations began in 1199, when Samuel Ibn Tibbon (d. ca. 1232), the illustrious scholar who was soon to produce his masterly Hebrew translation of Maimonides's *Guide of the Perplexed*, translated into Hebrew one of Galen's most popular works, namely the *Tegni* (also called *Ars parva*), accompanied by the detailed commentary of the Cairo physician 'Alī Ibn Riḍwān (d. 1061). Samuel illustrates the type of Muslim-Jewish relations that were to prevail in the domain of medicine in the following centuries. He grew up in Lunel, far from any Muslim society but in a bilingual and bicultural family. Only when he travelled to the east (notably to Egypt) did he presumably come into direct contact with Muslims. On one of his trips, he acquired a copy of the well-known Arabic dictionary *Kitāb al-ʿAyn* (Book of al-ʿAyn)<sup>62</sup> by al-Farāhīdī (d. 786). Essentially, however, the Arabic-to-Hebrew cultural transfer did not anymore involve life within an Arabic-speaking culture and living contacts to Muslims; rather, Jewish physicians' connection to Arabic medicine was now mostly bookish.

We thus pass to an era of Arabic-to-Hebrew translations of medical works (among a multitude of others). In the thirteenth century, Hebrew translations of Arabic medical works were written mainly in Italy, not in the Midi, otherwise the hearth of Arabic-to-Hebrew translations. The reason is simple. The Midi harbored many bicultural families of Andalusī origin in which the medical profession passed from father to son (as did also, more generally, Arabic language and culture). Jews were not admitted into the universities and medical tuition was private, usually within the family.<sup>63</sup> Thus, Arabic-Hebrew bilingualism and the medical profession were to a considerable extent connected. Obviously, the bilingual families of physicians in the Midi did not need Hebrew translations of Arabic medical works, and indeed such translations ran against their interest: They preferred to keep the practice of medicine limited. In Italy, by contrast, there were no Arabic-Hebrew bilingual families. Now in the thirteenth century, Latin Galenic and Avicennian medicine made great progress in Italy, and the Jewish doctors badly needed access to the same professional literature that was available to their Christian confreres. Most of them did not know Latin and so they triggered Arabic-to-Hebrew translations of medical works. Fortunately, a few bilingual physicians who either came from elsewhere or learned Arabic during travel were available. The most significant of these translations is surely that of Avicenna's highly important *Canon*, translated into Hebrew in Rome in the 1280s. This translation was later revised more than once, and the work was commented upon by several scholars, both in Italy and in the Midi. In the fourteenth century, the situation changed: The knowledge of Arabic in the Midi declined, and so the need for Hebrew translations of Arabic works increased. From that century onward, the center of Arabic-to-Hebrew medical translations shifted to the Midi.

Let us look at some quantitative data along the time axis concerning the transmission process.<sup>64</sup> During the thirteenth century, the Hebrew medical library consisted almost exclusively of translations from Arabic. In the fourteenth century, the prestige of Latin medicine rose steeply and Jews (both in the Midi and in Italy) turned to both the Arabic and the Latin medical literature. This trend increased in the fifteenth century. Table 5.1 below summarizes these data.

In the thirteenth century, a total of 190 books were translated into Hebrew, most of them (161, or 85 per cent) from Arabic. The number of translations of medical works is 62 (33 per cent of all translations). Of these, 45 (73 per cent) were translated from Arabic and only 17 (7 per cent) from Latin.

Table 5.1 Hebrew translations, thirteenth to fifteenth centuries, by subject and source language

	Translated from Arabic		Translated from Latin	
	Philosophy and science (% of total)	Medicine (% of total)	Philosophy and science (% of total)	Medicine (% of total)
1201–1300	N = 116 (72) N = 161 (85) Total: N = 190	N = 45 (28)	N = 12 (41) N = 29(15)	N = 17 (59)
1301–1400	N = 100 (73) N = 137 (59) Total: N = 233	N = 37 (27)	N = 34 (35) N = 96 (41)	N = 62 (65)
1401–1500	N = 9 (75) N = 12 (13) Total: N = 89	N = 3 (25)	N = 53 (69) N = 77 (87)	N = 24 (31)

In the fourteenth century, the balance shifts. The total number of translations was 233, of which 137 were translated from Arabic and 96 from Latin. We have 99 medical translations (42 per cent of all translations), of which 37 (37 per cent) were translated from Arabic and 62 (63 per cent) from Latin. Thus, although the number of Arabic-to-Hebrew translations decreased only slightly (from 45 to 37), the percentage decreased steeply (from 73 to 37), obviously as a result of the increase the number of medical translations from Latin.

Finally, in the fifteenth century, the total number of translations decreased sharply to 89, of which only 27 are medical (30 per cent of all translations). Of these, only 3 (11 per cent) were translated from Arabic and 24 (89 per cent) from Latin.

Just by way of illustration, I list a sample of the titles of medical works by authors from the Muslim-Arabic civilization (mostly Muslims, but some Nestorians and some Jews) that were translated into Hebrew directly from Arabic; translations from Arabic of Greek works of medicine (notably Hippocrates and Galen) are not included:<sup>65</sup>

- Abū Bakr al-Rāzī, *Prescriptions (Antidotarium)*
- Abū Bakr al-Rāzī, *The Book of Division and Lessening*
- Abū Bakr al-Rāzī, *On the Illnesses of Children*
- Abū Bakr al-Rāzī, *Medical Aphorisms*
- Abū Bakr al-Rāzī, *Aphorisms*
- Abū Bakr al-Rāzī, *Apology of the Careless Physician*
- Abū Bakr al-Rāzī, *On Phlebotomy*
- Abū al-Ḥasan Sufyān, *Simple Medicines*
- Abū Ja‘far Aḥmad Ibn al-Jazzār, *Provisions for the Traveller*
- Abū Ja‘far Aḥmad Ibn al-Jazzār, *Epistle about the Forgetfulness*
- Abū Marwān Ibn Zuhr, *Book of Foods and Medicines*
- Abū Marwān Ibn Zuhr, *On the Difference between Honey and Sugar*
- Abū Marwān Ibn Zuhr, *The Relief*

- Abū Marwān Ibn Zuhr, *On the Regimen of Health*
- Abū Marwān Ibn Zuhr (Pseudo?-), *The Light in Medicine*
- Abū al-Qāsim az-Zahrāwī, *Book of Praxis*
- ‘Alī al-Qarashī Ibn an-Nafīs, *Compendium of Avicenna’s Canon*
- ‘Alī Ibn Riḍwān, *The Principles of Medicine*
- ‘Alī Ibn Riḍwān, *Commentary on Galen’s Tegni*
- Ibn Rushd (Averroes), *Generalities of Medicine (Kitāb al-Kulliyāt)*
- Ibn Rushd (Averroes), *Treatise on the Theriac*
- Ibn Rushd (Averroes), *Simple (Medicines) for the Cure of the Illnesses of the Body*
- Ibn Rushd (Averroes), *On Purgatives*
- Ibn Sīnā (Avicenna), *Poem on Medicine (Cantica)*
- Ibn Sīnā (Avicenna), *Canon*
- Ibn Sīnā (Avicenna), *On Cardiac Drugs*
- Ḥunayn Ibn Isḥāq, *Introduction to Galen’s Tegni*
- Isaac Israeli, *Book on Fevers*
- Umayya Ibn Abī al-Ṣalt, *Book of Simple Medicines*
- Yuḥannā Ibn Māsawayh (junior?), *General Canons and Simple Medicines*
- Yuḥannā Ibn Māsawayh (junior?), *Prescriptions (Antidotarium)*
- Zayn al-Dīn al-Jurjānī, *Medical Encyclopaedia* (translated from Persian)

To these, the numerous Arabic-to-Hebrew translations of medical works of Maimonides (d. 1204) should be added: He wrote them toward the end of his life, in Fustāt, and they were all translated into Hebrew.<sup>66</sup>

As could be expected, some Jewish students of the translated medical works composed, in Hebrew, original works in this domain. This corpus has not yet been studied extensively. It appears, however, that the authors of most of these works were Arabophone and could thus draw on works in Arabic, including such that had not been translated into Hebrew.<sup>67</sup>

The Arabic-to-Hebrew transmission of medical lore is most palpably visible in bi- or multilingual medical glossaries (also called *synonym lists*). In the Middle Ages, multilingual glossaries of medical terms were a common phenomenon.<sup>68</sup> Medical works were translated frequently; indeed cultural transfer understandably often started with medical knowledge. As already noted, such knowledge was universal and not affected by religious differences, while at the same time it was ubiquitously useful and desired. The *materia medica* contained in medical works posed an obvious problem for a translator and his readers. While it was crucial that the reader be able to identify the named substances correctly, not every name in the source language had an easily identifiable and widely known name in the target language. Moreover, physicians often travelled and when they came to a new linguistic area, they needed to communicate with local confreres, patients and, crucially, with pharmacists and druggists. An error in the identification of an ingredient of a prescribed drug could have dramatic consequences for the patient, and often for the physician, too. To make it possible for knowledge (and physicians) to be reliably transmitted from one culture to another, glossaries were created indicating the names of medical substances in different languages. Thus, Dioscorides’s famous *De Materia Medica*, composed in Greek in the first century CE, was the object of many adaptations in which, to the original Greek terms, the Arabic and Latin equivalents were added. In fact, Ḥaṣḍai Ibn Shaprūt of Córdoba (d. ca. 970), the noted Hebrew poet, scholar, and diplomat who was the physician and confidant of Caliph ‘Abd al-Raḥmān III (r. 912–961), participated in translating *De Materia Medica* into Arabic. The introduction into Arabic culture of medical lore from many sources (Greek, Syriac, Persian,

Indian, etc.) gave rise to the preparation of multilingual glossaries. One famous list of this kind was prepared by Moses Maimonides.<sup>69</sup>

It was thus natural that the translations of Arabic (and other) works of medicine into Hebrew be accompanied by the creation of bi- or multilingual glossaries of medical terms. Usually the glossaries indicated not only the Hebrew equivalent of an Arabic term in the translated work but also its equivalent in the vernacular of the region in which the glossary was prepared, and often also the corresponding Latin term. This development accounts for the existence of a number of Hebrew-Arabic-Romance glossaries. They reflect the fact that while the language in which Jews wrote and read was Hebrew, in daily life physicians conversed with their confreres, patients, and druggists (Jewish or Christian) in the local vernacular. It bears mentioning that these multilingual glossaries were all written entirely in Hebrew script. (Jews in this period wrote all languages exclusively in Hebrew characters, including not only Arabic but also any Romance language and even – albeit very rarely – Latin.)

One may ask why the glossaries written in Romance-speaking regions continue to carry Arabic terms: Was it not sufficient to indicate the Hebrew and vernacular terms? The continued use of Arabic in these glossaries bespeaks the fact (mentioned earlier) that many Jewish physicians were Arabophone, even when living under the Cross (especially in Christian Spain and the Midi). These glossaries thus embody a continued – albeit bookish – connection to Arabic culture. A particularly important trilingual glossary – by Shem-Tov b. Isaac of Tortosa (b. 1198), part of his translation of al-Zahrāwī's *Kitāb at-Taṣrīf* (*The Arrangement of Medical Knowledge*) – has recently been published with an informative introduction.<sup>70</sup>

The cultural connectedness of Hebrew medicine to its Arabic forerunner gradually loosened in the second half of the fourteenth century. Latin medicine, institutionalized in the universities, made headway and became ever more prestigious. Jewish physicians had to connect to the new trend: Their patients expected them to be on the cutting edge, as did the Christian doctors with whom they often collaborated. At the same time, the Arabic-Hebrew bilingualism receded and with it doctors' capacity to read medical works in Arabic or to translate such works. Thus, the ties between the Hebrew cultures in the Midi and in Italy, including medicine, and Arabic culture gradually loosened. Hebrew medicine shifted from a dependence on Arabic medicine to a dependence upon Latin medicine. The "symbiosis" between Jewish and Muslim cultures, which had begun in the ninth century and which from the twelfth century onward persevered via books, came to an end. From the fifteenth century onward, Jewish physicians became increasingly integrated in Latin medicine.<sup>71</sup>

The picture drawn above can be used as a point of departure for a concluding remark on Jewish-Muslim relations on the level of science.<sup>72</sup> Jewish intellectuals in Dār al-Islām could access whatever writings in Arabic they wished in all branches of knowledge. Some Jews joined the "scientific community" of the majority culture and wrote (in Arabic) philosophical-scientific works addressed to the entire world of learning. A case in point is the noted Persian astrologer Mashā'allāh ibn Atharī (d. 815) from Basra. However, most Jewish intellectuals in the Islamic world turned their attention inward to the spiritual needs of the Jewish community. These scholars applied the philosophy and the sciences they had assimilated to intellectual concerns of the Jews, notably the interpretation of scripture: They contented themselves, as it were, with being consumers of science rather than seeking to join its producers. This holds of the foremost Arabophone Jewish intellectuals such as Ṣa'adya Ga'on (d. 942) or Moses Maimonides (d. 1204). A few scholars did both: Addressing themselves to the entire "republic of letters," they contributed to the "general discourse" of

the sciences; at the same time, they also wrote works drawing on their expertise that were destined for the Jewish community (and hence written in Judeo-Arabic). This is exemplified by the case of the distinguished philosopher Abū'l-Barakāt Hibat Allāh ibn Malkā al-Baghdādī (d. ca. 1164): In addition to his strictly philosophical works (which in many respects followed Ibn Sīnā), he wrote a commentary on the biblical book of Ecclesiastes; much the same holds of Sa'd Ibn Maṣṣūr Ibn Kammūna (d. ca. 1285). Similarly, the philosopher and poet Salomon Ibn Gabirol (d. 1058) wrote in Arabic a Neoplatonic philosophical treatise that was totally devoid of any Jewish references, so much so that the Jewish identity of the author was discovered only in the nineteenth century; at the same time, he composed a great number of Hebrew poems, including religious poetry. Again, the Toledo Jewish Aristotelian philosopher and historiographer Abraham Ibn Daud (d. ca. 1180) wrote celebrated “inner-Jewish” works (notably of religious philosophy and Jewish history) but also (it seems) a commentary on Aristotle’s *Physics* (of which only a fragment is extant).<sup>73</sup> Ibn Daud’s person draws our attention to another significant dimension of Muslim-Jewish interactions in the realm of science: In the eleventh and twelfth centuries, Jewish scholars played a crucial role in the Arabic-to-Latin translation movement. Many texts were translated *à quatre mains* (lit. *by four hands*): A Jew (such as Ibn Daud, Avendauth in his Latin name) would consult an Arabic text and translate it orally into the vernacular, and a Christian scholar would write down its Latin translation.<sup>74</sup> Jews’ role in Arabic-Islamic society thus made them into bicultural and bilingual intermediaries between the Islamic and Latin cultures.

In Christian Europe, the situation paralleled that depicted earlier with respect to medicine. Jews no longer had personal contacts with Muslims; instead, all contacts were now bookish. The twelfth to fifteenth centuries were the heyday of Hebrew science and philosophy, which essentially have their roots in Arabic culture. As can be seen in Table 5.1, during the thirteenth and fourteenth centuries, the great majority of Hebrew translations in the domains of science and philosophy were made from Arabic. In Jewish philosophy, the household names are notably Ibn Sīnā (d. 1037) – who was known by the Latin form of his name, Avicenna, in Europe (although next to nothing of his writings was translated into Hebrew<sup>75</sup>) – and Ibn Rushd, who was known by the Latin form of his name, Averroes, in Europe (many of whose writings survive in Hebrew only). Hebrew science, too, depends on Arabic science: Jewish astronomers, notably, pursued lines of inquiry opened by their Islamic predecessors. Only in the fifteenth century did the science and philosophy of the Latin majority culture begin to impact Hebrew science and philosophy. The repercussions of the Arabic origins of medieval Hebrew science and philosophy are felt to this very day: Much of modern Jewish philosophy is a continuation of its medieval forerunner, and scientific terminology in modern Hebrew owes much of its vocabulary to medieval Hebrew science, many of whose terms have their roots in Arabic.

As before, most Jewish scholars in Christian Europe were content to limit their attention to the concerns of the Jewish world of learning (mostly theological matters) and to draw for this purpose on philosophical and scientific lore “imported” from Arabic: They, too, were consumers rather than producers of science. Some, however, distinguished themselves as creative and original thinkers. One of them is the polymath Abraham Ibn Ezra already mentioned. The towering original philosopher and scientist, however, is the Provençal Levi ben Gershom (d. 1344): Working from Hebrew versions of Arabic works, he elaborated a highly original astronomical system that took its cue from that of Nūr al-Dīn al-Bīṭrūjī (d. ca. 1204) and other Arabic astronomers. By the same token, his philosophical work is nourished essentially from Ibn Rushd and other philosophers (Arabic or Greek) whose writings were available to him in Hebrew. Much the same holds of the religious philosopher

Ḥasdai Crescas (d. ca. 1410–1411), who used the tools of philosophy in an attempt to refute it altogether. The oeuvre of Ibn Ezra, Gersonides, Crescas, and many other writers on philosophy and science is thus a Hebrew continuation of the Arabic Iberian scientific and philosophical traditions.

## Notes

- 1 When referring to the specific period of Islamic history, the term *medieval* raises doubts, if only because it designates a period of European history. In this chapter, the term is used for the sake of convenience and it refers to the period roughly between the rise of Islam and the Ottoman occupation of the Arabic-Islamic world, which time frame basically corresponds to the European understanding of the Middle Ages.
- 2 The chapter does not discuss Jewish contributions to pharmacology, an issue that has been a subject of studies by scholars such as Martin Levey, Efraim Lev (with Zohar Amar), and Leigh Chipman (for references, see the list of further reading).
- 3 The Jewish doctors whose names had been mentioned in the Arabic sources (generally pre-Mamlūk) were carefully listed by Max Meyerhof in his “Mediaeval Jewish Physicians in the Near East, from Arabic Sources,” *Isis* 28:2 (1938): 432–460, and Eliyahu Ashtor in his *History of Jews* (for the age of the Mamlūks). Many thanks to Prof. Yaacov Lev for turning my attention to this work and summarizing for me some parts of it in English. Those whose names had been preserved in the archives of the Cairo Geniza are mentioned in numerous studies such as that by S. D. Goitein (see notes 4 and 5 below).
- 4 S. D. Goitein, *A Mediterranean Society: The Jewish Communities of the Arab World as Portrayed in the Documents of the Cairo Geniza*, 5 vols. (Berkeley, CA: University of California Press, 1967–88), vol. 5, p. 112.
- 5 S. D. Goitein, “The Medical Profession in the Light of the Cairo Geniza Documents,” *Hebrew Union College Annual* 34 (1963): 178, 192; also idem, *Mediterranean Society* 2:241–259.
- 6 ‘Abd al-Wahhāb al-Sha’rānī, *Lawā’ih al-Anwār al-Qudsiyya fī Bayān al-Uhūd al-Muhammadiyya* (Cairo: Al-Maṭba‘a al-Maymaniyya, 1903–4), p. 238; Michael Winter, *Society and Religion in Early Ottoman Egypt: Studies in the Writings of ‘Abd al-Wahhāb al-Sha’rānī* (London: Transaction Books, 1982), pp. 283, 285–286.
- 7 For a more detailed discussion of the question of the non-Muslims’ predominance in the Near Eastern medical culture, see Paulina B. Lewicka, “The Non-Muslim Physician in the Muslim Society: Remarks on the Religious Context of Medical Practice in Medieval Near East,” in *Islam and Globalization: Historical and Contemporary Perspectives. Proceedings of the 25th Congress of L’Union Européenne des Arabisants et Islamisants*, ed. Agostino Cilardo (Leuven: Peeters, 2013), pp. 495–507, and idem, “Medicine for Muslims? Islamic Theologians, Non-Muslim Physicians and the Medical Culture of the Mamluk Near East,” *ASK Working Paper 03* (Bonn, 2012), <https://www.mamluk.uni-bonn.de/publications/working-paper/ask-working-paper-03-22.11.2012.pdf>. On the contribution of Christians in particular, see, for example, Dimitri Gutas, *Greek Thought, Arabic Culture: The Graeco-Arabic Translation Movement in Baghdad and Early Abbasid Society (2nd–4th/5th–10th centuries)* (Oxford: Routledge 2005), pp. 17–34.
- 8 See below, p. 6 and note 29.
- 9 This does not mean that Christians or Jews could not work in the government service at all. As neither the ‘Abbāsids nor the Fāṭimids nor the Ayyūbids manifested an exceedingly repressive attitude toward *dhimmīs*, all through the Middle Ages Muslim rulers quite often employed *dhimmī* scribes, secretaries, and other officials, particularly in chanceries and fiscal departments of the state administration. This changed only under the Mamlūks, when the propaganda against employing non-Muslims in public offices intensified.
- 10 Cf. Franz Rosenthal, “The Physician in Medieval Muslim Society,” *Bulletin of the History of Medicine* 52 (1978): 491.
- 11 For a concise presentation of the Galenic theory of humoral pathology see, for example, Ullmann, *Islamic Medicine*, pp. 56–62; Michael Dols, *Medieval Islamic Medicine: Ibn Rīḏwān’s Treatise “On the Prevention of Bodily Ills in Egypt”* (Berkeley, CA: University of California Press, 1984), pp. 10–16; also Peter E. Pormann and Emilie Savage-Smith, *Medieval Islamic Medicine* (Washington, DC: Georgetown University Press, 2007), pp. 43–45.



- 12 As elsewhere, in the Islamic world the humoral medicine doctrine existed alongside a wide range of other beliefs and healing practices.
- 13 In the Arabic-Islamic world, Galenic medicine became an intellectual discipline that “formed part of the ‘liberal education’ of a well-educated man”; Dols, *Medieval Islamic Medicine*, p. 38. Interestingly, private correspondence preserved in the Geniza abounds in references to medical advice sought also by the poor; Goitein, *Mediterranean Society*, 2:241.
- 14 Although Muslim doctors sometimes treated non-Muslim patients – as did a doctor whose treatment of a Jewish girl was recorded in a Geniza document; see Goitein, *Mediterranean Society*, 2:256.
- 15 Khalil ibn Aybak al-Şafādī, *A‘yān al-‘Aşr wa A‘wān al-Naşr*, ed. ‘Alī Abū Zayd, 6 vols., (Damascus: Dār al-Fikr, 1998), vol. 5, pp. 180–182. Cf. an anecdote about a Muslim physician, who lost the competition to the non-Muslim physicians as quoted by al-Jāhīz (eighth to ninth centuries). Translation in Peter E. Pormann, “The Physician and the Other: Images of the Charlatan in Medieval Islam,” *Bulletin of the History of Medicine* 79:2 (2005): 214.
- 16 Miri Shefer, “Physicians in Mamluk and Ottoman Courts,” in *Mamluks and Ottomans: Studies in Honour of Michael Winter*, eds. David Wasserstein and Ami Ayalon (London: Routledge, 2006), p. 116; cf. Goitein, “Medical Profession,” p. 177. Indeed, some had enormous libraries: Ifrā‘īm Ibn al-Zaffān, a Jewish physician who served Fātimid caliphs, left at his death more than 20,000 volumes, on top of the 10,000 that he had managed to sell to the vizier al-Afḍal. This account is found in the famous Arabic compendium of physicians’ lives by Ibn Abī Uşaybi‘a, translated as *History of Physicians*, trans. Lothar Kopf (Bethesda, MD: National Library of Medicine, 1971), pp. 717–718. Online version: [http://www.tertullian.org/fathers/ibn\\_abi\\_usabia\\_03.htm](http://www.tertullian.org/fathers/ibn_abi_usabia_03.htm); al-Şafādī, *Wāfi*, 9:175; also Meyerhof, “Mediaeval Jewish Physicians,” p. 443. On the libraries of Jewish doctors, see also Goitein, “Medical profession,” pp. 185–186.
- 17 See Meyerhof, “Mediaeval Jewish Physicians,” p. 439.
- 18 Christoph Bürgel, “Secular and Religious Features of Medieval Medicine,” in *Asian Medical Systems: A Comparative Survey*, ed. Charles Leslie (Berkeley, CA: University of California Press, 1976), p. 52.
- 19 See, for example, biographies discussed in Meyerhof, “Mediaeval Jewish Physicians,” *passim*. On the acquisition and transmission of medical knowledge by Jews living in the Islamic world, see Caballero-Navas, “Medicine,” pp. 323–329.
- 20 Goitein, *Mediterranean Society*, 2:252.
- 21 *Al-Wāfi bi’l-Wāfayāt*, ed. Aḥmad al-Arnā‘ūt and Turkī Muştafā, 29 vols. (Beirut: Dār al-Iḥyā’ al-Turāth al-‘Arabī, 2000), vol. 9, p. 9; Marin Levey, “Medical Ethics of Medieval Islam, with Special Reference to al-Ruhāwī’s ‘Practical Ethics of the Physician,’” *Transactions of the American Philosophical Society*, 57:3, 1967: 74.
- 22 For comments on the wages of the royal doctors see, for example, Meyerhof, “Mediaeval Jewish Physicians,” pp. 443, 454, 457.
- 23 As Meyerhof calls him: “Mediaeval Jewish Physicians,” p. 438.
- 24 For some other names of Jewish physicians employed by the Fātimids, see Goitein, “Medical Profession,” pp. 179–181; Meyerhof, “Mediaeval Jewish Physicians,” pp. 442–443.
- 25 On Maimonides as presented in Arabic sources, see, for example, Meyerhof, “Mediaeval Jewish Physicians,” pp. 446–450; on other Jewish doctors of Saladin’s, see Jadon, “Comparison,” *passim*; also Meyerhof, “Mediaeval Jewish Physicians,” pp. 444–446, 450–452.
- 26 See Meyerhof, “Mediaeval Jewish Physicians,” p. 450.
- 27 Al-Kāmil Muḥammad had Maimonides’s son Abraham in his service; see Meyerhof, “Mediaeval Jewish Physicians,” p. 451.
- 28 See Meyerhof, “Mediaeval Jewish Physicians,” pp. 451, 454.
- 29 For a more detailed discussion of the topic, see David Biale (ed.), *Cultures of the Jews*, 3 vols. (New York: Schocken Books, 2002), vol. 2, p. 17.
- 30 Some contemporary authors make occasional attempts to detect specific anti-Jewish sentiments in medieval Islamic society; for a comment and references, see Lewicka, “Non-Muslim Physician,” p. 499, note 16.
- 31 Radicalization denotes a process by which an individual or a group comes to adopt increasingly radical political, social, or religious views and advocates extreme or fundamental changes in various spheres of life.
- 32 For discussion of this process, see Lewicka, “Medicine for Muslims?”

- 33 Although it seems to have been a common practice for physicians to diagnose an illness and prescribe medicaments without seeing the sick; for examples, see Goitein, *Mediterranean Society*, 2:254; Herbert A. Davidson, *Moses Maimonides: The Man and His Works* (Oxford: Oxford University Press, 2010), p. 69.
- 34 Ibn Abī Uṣaybi‘a, *History of Physicians*, pp. 734–735, [http://www.tertullian.org/fathers/ibn\\_abi\\_usaibia\\_03.htm](http://www.tertullian.org/fathers/ibn_abi_usaibia_03.htm)
- 35 ‘Alī Ibn al-Ḥasan al-Khazrajī, *Kitāb al-‘Uqūd al-Lu‘lu‘iyya fī Tārīkh al-Dawla al-Rasūliyya*, 2 vols., ed. Muḥammad Basyūnī ‘Asal (Beirut: Dār Ṣādir, 1994), vol. 1, pp. 68–69.
- 36 Ibn Abī Uṣaybi‘a, *History of Physicians*, [http://www.tertullian.org/fathers/ibn\\_abi\\_usaibia\\_03.htm](http://www.tertullian.org/fathers/ibn_abi_usaibia_03.htm), pp. 842–847.
- 37 The fragment is discussed by Perlmann, “Position,” p. 317; see also a discussion of this fragment by Pormann, “Physician,” pp. 220–221. (Some of Pormann’s conclusions seem disputable, though.)
- 38 For the discussion of the anti-*dhimmi* discourse of which Jewish physicians were a part see Paulina Lewicka, “Did Ibn al-Ḥājī Copy from Cato? Reconsidering Aspects of Inter-Communal Antagonism of the Mamluk Period,” in *Ubi sumus? Quo vademus? Mamluk Studies – State of the Art*, ed. Stephan Conermann (Bonn: University Press at V&R Unipress, 2013), pp. 231–261, and the references therein.
- 39 See Northrup, *Patronage*, p. 127.
- 40 Goitein, “Medical Profession,” p. 187. According to Goitein, Jews may have refrained from doing so on account of dietary laws.
- 41 Goitein, “Medical profession,” p. 186.
- 42 Al-Ṣafadī, *A‘yān*, vol. 2, p. 404.
- 43 Al-Ṣafadī, *A‘yān*, vol. 1, pp. 488–489; Aṣ-Ṣafadī, *Wāfi*, vol. 15, p. 80.
- 44 Al-Khazrajī, *‘Uqūd*, vol. 2, pp. 294–295.
- 45 Both prohibitions are mentioned in Lewicka, “Medicine for Muslims?,” p. 16. For the prohibition of 1448, see also Perlmann, “Position,” p. 319; and idem, “Anti-Christian,” p. 861.
- 46 See Little, “Coptic Conversion,” pp. 567–569.
- 47 Al-Ashraf Barsbāy had two Jewish physicians; in 1438 both were executed for being unable to cure the sultan. See Meyerhof, “Mediaeval Jewish physicians,” p. 458; Doris Behrens-Abouseif, “Fatḥ Allāh and Abū Zakariyya: Physicians under the Mamluks,” *Supplément aux AI 10* (Cairo: Institut Français d’Archéologie Orientale, 1987), p. 16.
- 48 Meyerhof, “Mediaeval Jewish Physicians,” p. 457.
- 49 Goitein, *Mediterranean Society*, vol. 4, p. 253.
- 50 Shefer, “Physicians,” p. 115.
- 51 Behrens-Abouseif, “Image,” p. 339.
- 52 Shefer, “Physicians,” pp. 115, 117; see also Heyd, “Moses Hamon,” p. 153.
- 53 Cf. Gadelrab, “Medical healers,” p. 386; Joseph Shatzmiller, *Jews, Medicine, and Medieval Society* (Berkeley, CA: University of California Press, 1994), pp. 122–123.
- 54 For the situation of *ahl al-dhimma* during the Mamlūk era, see for example, Donald P. Little, “Coptic Conversion to Islam under the Baḥrī Mamlūks, 692–755/1293–1354,” *Bulletin of the School of Oriental and African Studies* 39 (1976): 552–569; Linda S. Northrup, “Muslim-Christian Relations during the Reign of the Mamluk Sultan al-Manṣūr Qalāwūn, AD 1278–1290,” in *Conversion and Continuity: Indigenous Christian Communities in Islamic Lands, Eighth to Eighteenth Centuries*, eds. Michael Gervers and Ramzi Jibran Bikhazi (Toronto: Pontifical Institute of Mediaeval Studies, 1990), pp. 253–261; Moshe Perlmann, “Notes on Anti-Christian Propaganda in the Mamlūk Empire,” *Bulletin of the School of Oriental and African Studies* 10 (1942): 843–861.
- 55 Quoted from Y. Tzvi Langermann, “Arabic writings in Hebrew manuscripts: a preliminary relisting,” *Arabic Sciences and Philosophy* 6:1 (1996): 140.
- 56 See Van Koningsveld, “Andalusian-Arabic manuscripts from medieval Christian Spain: A comparative intercultural approach.” Many Arabic medical manuscripts in Hebrew script survive, but no attempt has yet been made to determine which of them originate from Christian Spain.
- 57 Caballero-Navas, “Medicine among medieval Jews,” p. 327.
- 58 See Freudenthal, “Science: the appropriation and naturalization of scientific knowledge among Jews in Europe.”

- 59 See Gad Freudenthal and Ruth Glasner, “Patterns of Medieval Translation Movements,” in *De l’Antiquité tardive au moyen âge. Études de logique aristotélicienne et de philosophie grecque, syriaque, arabe et latine offertes à Henri Hugonnard-Roche*, eds. Elisa Coda and Cecilia Martini Bonadeo (Paris: Vrin, 2014), pp. 245–252.
- 60 Steinschneider, *Die hebraeischen Übersetzungen des Mittelalters und die Juden als Dolmetscher*, pp. 650–843. For a chronologically arranged list of all medieval Hebrew translations, see Mauro Zonta, “Medical Hebrew Translations of Philosophical and Scientific Texts: A Chronological Table,” in *Science in Medieval Jewish Cultures*, ed. Gad Freudenthal (Cambridge: Cambridge University Press, 2011), pp. 17–73.
- 61 See Freudenthal, “The Father of the Latin-into-Hebrew Translations: ‘Doeg the Edomite,’ the Twelfth-Century Repentant Convert,” in *Latin-into-Hebrew – Studies and Texts*. Volume 1: *Studies*, pp. 105–120.
- 62 The letter ‘ayn is the eighteenth letter of the Arabic alphabet.
- 63 Joseph Shatzmiller, *Jews, Medicine, and Medieval Society*.
- 64 Gad Freudenthal, “Arabic and Latin Cultures as Resources for the Hebrew Translation Movement: Comparative Considerations, Both Quantitative and Qualitative,” in *Science in Medieval Jewish Cultures*, ed. Gad Freudenthal (Cambridge: Cambridge University Press, 2011), pp. 74–105.
- 65 Data (including the translated titles) derived from Zonta, “Medical Hebrew Translations of Philosophical and Scientific Texts: A Chronological Table.”
- 66 Langermann, “L’œuvre médicale de Maïmonide: Un aperçu général.”
- 67 Caballero-Navas, “Medicine among medieval Jews; the science, the art, and the practice,” pp. 334–335.
- 68 For a short history of the Hebrew tradition, see Bos, “Medical terminology in the Hebrew tradition: Shem Tov Ben Isaac, *Sefer ha-Shimmush*, Book 30,” *Journal of Semitic Studies* 55 (2010): 53–101, as well as other studies by this author.
- 69 Max Meyerhof (ed. and trans.), Maimonides, *Sharḥ Asmā’ al-‘Uqqār – L’Explication des noms de drogues – un glossaire de matière médicale composé par Maïmonide* (Cairo: Institut Français d’Archéologie Orientale, 1940); Fred Rosner, *Moses Maimonides’ Glossary of Drug Names* (Philadelphia: American Philosophical Society, 1979).
- 70 Gerrit Bos et al. (eds.), Shem Tov Ben Isaac of Tortosa, *Sefer ha-Shimmush*, Book 29. *Medical Synonym Lists from Medieval Provence*. Part 1: *Edition and Commentary of List 1 (Hebrew—Arabic—Romance/Latin)* (Leiden: Brill, 2011).
- 71 Shatzmiller, *Jews, Medicine, and Medieval Society*.
- 72 For what follows, see Freudenthal (ed.), *Science in Medieval Jewish Cultures* and the rich bibliography there.
- 73 See Krisztina Szilágyi, “A Fragment of a Book of Physics from the David Kaufmann Genizah Collection (Budapest) and the Identity of Ibn Daud with Avendauth,” *Aleph: Historical Studies in Science and Judaism* 16 (2016): 343–363.
- 74 Zonta, “The Jewish Mediation in the Transmission of Arabo-Islamic Science and Philosophy to the Latin Middle Ages.”
- 75 On this intriguing phenomenon, see Gad Freudenthal and Mauro Zonta, “Avicenna amongst medieval Jews. The reception of Avicenna’s philosophical, scientific and medical writings in Jewish cultures, East and West,” *Arabic Sciences and Philosophy* 22 (2012): 217–287.

## Further reading

- Baker, Colin F., “Islamic and Jewish medicine in the medieval Mediterranean world: the Genizah evidence,” *Journal of the Royal Society of Medicine* 89 (1996): 577–580.
- Chipman, Leigh N., *The World of Pharmacy and Pharmacists in Mamlūk Cairo* (Leiden: Brill, 2010). The book, while being an analysis of a thirteenth-century Arabic guide for pharmacists, explores also the full spectrum of pharmacy in the medieval Arabic world. The author discusses such key topics as methods of drug preparation, the social position of the pharmacist, the economics of pharmacy, and legal aspects of pharmacy.
- Chipman, Leigh N., “The Jewish presence in Arabic writings on medicine and pharmacology during the medieval period,” *Religion Compass* (forthcoming).

- Davidson, Herbert A., *Moses Maimonides: The Man and His Works* (New York: Oxford University Press, 2005). The author analyzes every aspect of the life and works of Moses Maimonides (1137/38–1204), a Jewish scholar, philosopher, and physician who lived and worked within the Muslim society of al-Andalus and Egypt. Herbert Davidson discusses various aspects of Maimonides's life and work. One chapter of the book is devoted to medical works of Maimonides: Divided into two sections, it presents Maimonides's medical writings and analyzes what Davidson calls "Maimonides's system of medicine."
- Fidora, Alexander, Resianne Fontaine, Gad Freudenthal, Harvey Hames, and Yossef Schwartz (eds.), *Latin-into-Hebrew – Studies and Texts*, 2 vols. (Leiden: Brill, 2013). Most medieval transmission of knowledge to Hebrew was made from Arabic. This two-volume work complements the picture by addressing the transmission of knowledge and texts from Latin into Hebrew between the twelfth and the fifteenth century.
- Freudenthal, Gad (ed.), *Science in Medieval Jewish Cultures* (New York: Cambridge University Press, 2011). A collection of twenty-four authoritative essays on most aspects of medieval Jewish interest for and work in the sciences. Of special relevance to the topics treated in this article are: Zonta, Mauro, "Medical Hebrew Translations of Philosophical and Scientific Texts: A Chronological Table," pp. 17–73; Freudenthal, Gad, "Arabic and Latin Cultures as Resources for the Hebrew Translation Movement: Comparative Considerations, Both Quantitative and Qualitative," pp. 74–105; Caballero-Navas, Carmen, "Medicine among Medieval Jews: The Science, the Art, and the Practice," pp. 320–342.
- Freudenthal, Gad, "Science: The Appropriation and Naturalization of Scientific Knowledge Among Jews in Europe (12th–14th Centuries)," in *Jews and Judaism in the Christian World* eds. Robert Chazan and Marina Rustow (Cambridge History of Judaism, vol. 6) (Cambridge: Cambridge University Press, forthcoming). An attempt to describe systematically the slow process of the introduction of Greco-Arabic rationalist thinking into Hebrew cultures in Europe.
- Isaacs, H.D., "Medieval Judaeo-Arabic medicine as described in the Cairo Geniza," *Journal of the Royal Society of Medicine* 83 (1990): 734–737.
- Jadon, Samira, "The Physicians of Syria during the reign of Ṣalāḥ al-Dīn 570–589 AH 1174–1193 AD," *Journal of the History of Medicine and Allied Sciences* 25/3 (1970): 323–340.
- Koningsveld, P. S. van, "Andalusian-Arabic manuscripts from Christian Spain: a comparative intercultural approach," *Israel Oriental Studies* 12 (1992): 75–110. A classic study on the use of manuscripts of Arabic scientific works by medieval Jewish scholars.
- Langermann, Y. Tzvi, "Arabic writings in Hebrew manuscripts: a preliminary relisting," *Arabic Sciences and Philosophy* 6:1 (1996): 137–160. An important study on the use of works in Arabic by Jewish scholars as reflected by extant manuscripts in which the Arabic texts were copied in Hebrew characters.
- Lev, Efraim, and Zohar Amar, *Practical Materia Medica of the Medieval Eastern Mediterranean According to the Cairo Genizah* (Leiden: Brill, 2008). The book discusses the practice of medical care in the medieval Mediterranean world, particularly among Jewish communities of Muslim Egypt. The authors examine a variety of medicine-related documents that were found in the Cairo Genizah: medicinal prescriptions, lists of *materia medica*, and letters exchanged among physicians, pharmacists, and patients.
- Meyerhof, Max, "Sultan Saladin's physician on the transmission of Greek medicine to the Arabs," *Bulletin of the History of Medicine* 18 (1945): 169–178.
- Shatzmiller, Joseph, *Jews, Medicine, and Medieval Society* (Berkeley, CA: University of California Press, 1994). The fullest account available of the social history of medicine practiced by Jews in Europe.
- Steinschneider, Moritz, *Die hebraischen Übersetzungen des Mittelalters und die Juden als Dolmetscher* (Berlin, 1893). Partial English translation and *mise à jour*: Moritz Steinschneider, *The Hebrew Translations of the Middle Ages and the Jews as Transmitters*: Vol. 1. *Preface. General Remarks. Jewish Philosophers*, eds. Charles H. Manekin, Y. Tzvi Langermann, and Hans Hinrich Biesterfeldt (Dordrecht: Springer, 2013). A classic monumental work providing data (mostly still valid)

about the works in all domains of knowledge that were translated into Hebrew in the Middle Ages.

Stillman, Norman A., *The Jews of the Arab Lands* (Philadelphia, PA: Jewish Publication Society of America, 1979). The book covers more than eleven centuries of Jewish presence in the Arabic-Islamic world – from the Islamic conquests in the seventh century to the events of the twentieth century. As for the question of Jews living and working in the Arabic-Islamic world of the Middle Ages, two chapters are particularly relevant: “The best years: Mediterranean Jewry in the Islamic high Middle Ages” and “The long twilight: the Jews of Arab lands in the later Middle Ages.”

Tritton, A.S., *The Caliphs and their non-Muslim Subjects. A Critical Study of the Covenant of ‘Umar* (London: Oxford University Press, 1930). Although the book was originally published as early as 1930, it still constitutes a valuable guide to the interfaith relations or, more precisely, to the rules that governed the coexistence of Muslims and non-Muslims who lived and worked within the Muslim society of the Middle Ages. A. S. Tritton examines the social, cultural, religious-legal, and economic aspects of the relations between the two groups.

Zonta, Mauro, “The Jewish Mediation in the Transmission of Arabo-Islamic Science and Philosophy to the Latin Middle Ages. Historical Overview and Perspectives of Research,” in *Wissen über Grenzen. Arabisches Wissen und lateinisches Mittelalter*, eds. A. Speer and L. Wegener (Berlin: Walter de Gruyter, 2006), pp. 89–105. A competent review of the role of Jews in transmitting Greco-Arabic science and philosophy to Europe.