MAIMONIDES' MEDICAL WORKS
AND THEIR CONTRIBUTION TO
HIS MEDICAL BIOGRAPHY

by

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Abū ʿImrān Mūsā ibn ʿUbayd Allāh, usually called Moses Maimonides, one of the greatest philosophers and experts in Jewish law (Halakhah), was an eminent physician as well. After settling in Fustāt, the ancient part of Cairo, Maimonides started to practise and teach medicine. Thus he became the physician of al-Qādi al-Fāḍil, the famous counsellor and secretary to Saladin. Later he became court physician of al-Malik al-Afdal, after the latter’s ascension to the throne in the winter of 1198–9. As a teacher of medicine he taught his sister’s son Abū ʿRīḍā, surnamed “al-talmidh al-zāki” (“the brilliant student”). The Cairo Genizah has preserved a letter in which Meir b. al-Hamadānī implores Maimonides to admit his son as his pupil.¹

Next to being a physician and philosopher, Maimonides is the author of a rich and varied corpus of medical works, numbering ten works considered to be authentic.² Of these works four are held to be his major works, namely, Medical Aphorisms, Commentary on Hippocrates' Aphorisms, On Poisons and the Protection Against Fatal Drugs, and the Compendium from the Works of Galen. The first three mentioned


² For his medical works see Bos six–xx.
texts are only available in corrupt editions of the medieval Hebrew translations and in flawed modern translations based on the Hebrew, while the *Compendia from the Works of Galen* is only available in a partial translation into English. The remaining six minor treatises are: *On Coitus*, *On the Regimen of Health*, *On the Elucidation of some Symptoms (= On the Causes of Symptoms)*, *Commentary on the Names of Drugs*, *On Hemorrhoids* and *On Asthma*. Of these minor works some have been edited in the past by Hermann Krone, a German physician living and working in Boppingen, southern Germany, in the 1920s. But these editions suffer from mistakes and were edited on the basis of only one or two manuscripts.

Since Maimonides' medical works were so sorely neglected by scholarly research, a project has been set up aiming at providing critical editions of all the unedited medical works. The project was initially sponsored by The Wellcome Trust, London, and now by the Deutsche Forschungsgemeinschaft and The Institute for the Preservation of Ancient Religious Texts at Brigham Young University. The current status of the project is that the *Treatise on Asthma*, vol. 1, *Medical Aphorisms*, vols. 1–2, have been published; *On Asthma*, vol. 2 and *On Poisons* are in print; *Medical Aphorisms*, vols. three–five, *On Coitus*, *On Hemorrhoids*, *On the Regimen of Health*, and *On the Elucidation of some Symptoms* have been submitted for publication; the *Commentary on Hippocrates' Aphorisms* has been edited by Mr. Carsten Schliwski. Work on *Medical Aphorisms*, vol. 6, containing indices of the Arabic text and medieval Hebrew translations, is in progress. Still unedited is *Compendia from the Works of Galen*.

Maimonides' medical works are a rich source of information for the following aspects of his medical biography: 1. his medical training; 2. his medical theoretical knowledge; 3. his medical practice; 4. his attitude towards remedies belonging to the so-called "Dreckapotheke"; 5. his critical attitude towards the works of other physicians.

Concerning his medical training one should distinguish between formal training during a longer period and informal short contacts. It is certain that Maimonides did receive some sort of formal medical training, i.e. that he studied with senior physicians (shuyūkh). In his *On Asthma* he informs us explicitly that he studied with one of them while he was still in the Maghreb. He states that he turned to a shuyūkh (a senior physician) under whom he studied (wa-anā atzaqallām bayna yadayedhi) since he wanted to find out more about a notorious medical incident in which a young man, a glutton, weakened by indigestions and suffering from continuous choleric fever, died as a result of the wrong treatment he received from the hand of the attending physician. And in the *Medical Aphorisms* he remarks about diabetes that neither did he see it in the Maghreb nor did any one of the senior physicians under whom he studied (ahad min al-shuyūkh alladhīna qara'rū 'alayhim) inform him that he had seen it. Formal medical training usually took place in this way: one or several students would get what we would call private tutoring from a physician of established fame and would also practice under his or another's supervision.

As to informal short contacts, Maimonides repeatedly informs us how he met with senior physicians in order to obtain more information about the composition of certain drugs and about certain medical incidents. Thus in *On Asthma* he tells us that in his presence the best physicians repeatedly tested the composition of certain purgatives, and, having listed them, he remarks that he received all these formulas through personal instruction from the shuyūkh in the Maghreb. In *On Poisons* he hears how he turns to the shuyūkh to find out more about the reason why in every city through which he passed some men suffered from suppurring elephantiasis which results in the limbs falling off. He remarks that those senior physicians informed him that these men had been poisoned by their adulterous women by means of menstrual blood which they took from the beginning of the menses and which they put into the food, which then caused the observed afflictions. Maimonides wonders what to


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do with this information as this is something that is not mentioned in any medical book which he had read with this end in view; how then could one devote a chapter to the treatment of such a kind of poisoning? And in the same treatise, when speaking about rabies, Maimonides entreats the reader to be careful and to distinguish as is done in the medical books between the bite of a mad dog and that of a dog that is not mad, for people have died because of that, as he was informed by the senior physicians whom he met.\textsuperscript{9} That failing to do so could lead to disaster is then illustrated with the following account in which he tells us about his contact with a senior well-known physician who related to him that

\begin{quote}
he [once] saw in [the city] of Almería a young silk weaver who was bitten by a dog, and that it was not accompanied by any of the symptoms of the bite of a mad dog. The physicians then decided that it was a domesticated dog and let the wound close up after a month or so and the boy recovered. He stayed healthy for a long time and carried out the activities of healthy people. Later, the symptoms [of the bite of a mad dog] became apparent in him, he got hydrophobia and died.\textsuperscript{10}
\end{quote}

This discussion by Maimonides shows us in an enlightening way how the medical theory formulated by him draws on two sources, both theoretical, i.e. what he learned from the medical books, and practical, what one can learn from everyday life. In the same vein we hear in \textit{On Asthma} about his contact with the sons of the physicians who had treated the ruler Ali b. Yusuf b. Tāshufin who died in 1143 as a result of an incorrect dose of the theriac. Maimonides relates that he contacted them in order to learn something useful from their report. But they kept silent so that he could not profit from it.\textsuperscript{11}

An important motive for contacting senior physicians was his interest in pharmaceutics and pharmacology. As noted above, in \textit{On Asthma} Maimonides describes the preparation of certain purgatives which the most skillful physicians tested repeatedly in his presence while he was in the Maghreb, and adds that he received all these formulas as personal instruction from them, and that only a few of them are written in books, while they are unknown among the people. In his \textit{Dictionary of Drug Names} he relates that lavender (\textit{Lavandula stoechas}), Arabic \textit{ustukhidas}, which the physicians employ in the Maghreb and Egypt, is the same plant which the people of Maghreb call \textit{al-halhat} and that he has learned from eminent scholars, who study plants in a learned and diligent way, that it is not the same lavender as that mentioned by Galen, but something that possesses the same medicinal properties.\textsuperscript{12} Maimonides remarks that the real lavender has larger leaves and thicker inflorescences and that it grows in the vicinity of Toledo. In the same \textit{Dictionary} he informs us that \textit{al-qilqil} is the seed of a plant which the pharmacists in his time sell as a substitute for the true balsam seed.\textsuperscript{13} In \textit{On Poisons} Maimonides informs us how he consulted a learned botanist to find out the identity of a serpent root, the root of a plant that can be found in the vicinity of the Temple in Jerusalem and which is effective – as experience has shown – against poisons, a recipe taken from the \textit{K. al-murshid} by al-Tamimi – a physician who hailed from Jerusalem and moved to Egypt in 970 to serve the vizir Yaqūb ibn Killīs.\textsuperscript{14} The learned botanist told him that it is a species of melilot that is called ‘the scorpion-like’.

We see how Maimonides tries to make the theoretical information gleaned by him from the \textit{K. al-murshid} fit for practical application by finding the identity of this plant in the region where he lives. In his \textit{Dictionary of Drug Names} he states in more general terms that this species is called ‘the scorpion-like melilot’ and that he has learned that the roots which are imported from Palestine are useful as a theriac against the bite of vermin.\textsuperscript{15} In his \textit{On the Regimen of Health} Maimonides remarks that his advice to his client to use barberry seeds which are known for their constipating qualities in a laxative preparation with Indian laburnum, is based on information he re-

\textsuperscript{9} On Poisons 69 (forthcoming ed. and trans. Bos).
\textsuperscript{10} Ibid.
\textsuperscript{11} On Asthma 1338 (ed. and trans. Bos 102–104).
\textsuperscript{12} Dictionary of Drug Names, no. 6; ed. Max Meyerhof: Sharh asma‘ al-‘uqār (L’explication des noms des drogues). Un glosaire de matière médicale composé par Maimonides, Cairo (Imprimerie de l’Institut Français d’Archéologie Orientale, 1940); trans. F. Rosner: \textit{Moses Maimonides’ Dictionary of Drug Names} (Maimonides’ Medical Writings 7), Haifa 1995.
\textsuperscript{13} Dictionary of Drug Names, no. 324.
\textsuperscript{14} On Poisons 23 (ed. and trans. Bos).
\textsuperscript{15} Dictionary of Drug Names, no. 7.
received from the *shuyūkḥ al-ṣināʿa* (the Elders of the Art), namely, that the barberry seeds prevent the possible distress and abrasion caused by Indian laburnum.¹⁰ Maimonides' concern about the practical application of the remedies he knows from the theoretical literature is actually his major motive for composing his *Glossary of Drug Names*, in which he explains the Arabic names of the remedies by means of the corresponding term in Romance and the term under which it is known amongst the people in the Maghreb and in Egypt. Thus he remarks that *melilot* (*ihlīl al-malik*) is called "ṭirāzan" in Berber and "qarnīlīḥ" in Romance (*ajamiyya al-Andalus*).¹⁷ By composing this glossary or list of medical synonyms he enables the physicians in those regions to identify and apply the remedies recommended in the theoretical Arabic pharmaceutical literature for certain diseases. We may conclude that next to a formal training limited to a certain period in his life he was always looking for opportunities to supplement and update the training he received with fresh information from reliable informants.

The question whether Maimonides received a more formal and systematic training in medicine has been answered in a negative vein by research so far. According to Leibowitz, it is almost certain that Maimonides never studied medicine in a formal way.¹⁸ Meyerhof remarks that it is possible that he never had any formal training in medicine.¹⁹ Bar-Sela-Hoff-Faris concludes in a more cautious way that the exact source of his medical education is not yet established.²⁰

As to his theoretical medical knowledge, a study of his medical works shows above all his thorough command of Galen's medical *corpus*.²¹ As for all his predecessors and contemporaries, Galen was the physician and medical authority "*par excellence*". Being a physician was in his way going in his footsteps, which meant appropriating the sea of material incorporated in his medical works. Maimonides was no exception to this. Repeatedly he expresses his veneration for Galen the doctor. Thus he calls him the master (*Inām*) of the art of medicine, in Treatise twenty-five of the *Medical Aphorisms*.²² And in the context of his devastating critique of Galen as a philosopher in the same Treatise twenty-five of the *Medical Aphorisms*, Maimonides hails him as the greatest doctor and anatomist that ever lived who unfortunately overstepped his boundaries and ventured out to speak about things in which he is very deficient, i.e. philosophy.²³ Maimonides must have studied Galen in depth and must have known large parts of his works by heart. Only in this way can we explain the composition of his *Medical Aphorisms*, which is nothing else but a note-book covering the whole field of medicine adapted from Galenic material.²⁴ Treatise twenty-three of the *Medical Aphorisms* in which Maimonides discusses the differences between well-known diseases and the elucidation of medical technical terms, is illustrative of Maimonides' expert knowledge of the medical writings composed by Galen and of medical literature in general. Thus he remarks in Aphorism 25 that some of the commentators have confused some of the technical terms, indiscriminately using, for instance, the term "ṣīfāq" for (1) the internal membranes of the organs; (2) the tunic of the eye; (3) some of the coverings such as the third covering of the spinal cord. Maimonides' thorough and detailed medical knowledge, even in a field as difficult and complicated as that of eye-diseases, is born out by his explanation of several obscure terms in this field, such as *kunna* (*pus behind the horn-like tunic*), *sulāq* (*ptilosis*), and *muzaraj* (*prolapse of the iris*) in Aphorism 70. And only someone mastering Galen's whole medical *corpus* would be able to point

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¹¹ *Glossary of Drug Names*, no. 7.
¹³ Max Meyerhof, "The medical works of Maimonides," *Essays on Maimonides*, an octocentennial volume, ed. by S.W. Baron, New York (Columbia University Press, 1944) 265–299, p. 266; "it is improbable that he found time to reside with a physician, as was usual in his days in order to obtain practical instruction in the medical arts"; cf. *On Asthma* (ed. and trans. Bos xxv).
¹⁶ *Medical Aphorisms* 25:1 (forthcoming ed. and trans. Bos); see below.
out contradictory statements in the different books he composed, as Maimonides did in Treatise twenty-five of the Medical Aphorisms. And perhaps even more telling is his statement in Aphorism 44 in Treatise twenty-four of the same work. On the basis of his familiarity with Galenic terminology, Maimonides comes to the conclusion that the ascription of the treatise “On the Prohibition of the Burial of the Dead within Twenty-Four Hours” to Galen is false, and that the translator al-Bītrīq only considered the work as authentic because of his ignorance concerning the language typical of Galen. Maimonides’ conclusion to the pseudigraphical character of this work is confirmed in Arabic biobibliographical literature. But also for the composition of medical works which are seemingly less dependent on Galen, Galen is nevertheless a primary source. Thus his On Asthma is basically a health guide composed to a large extent on Galenic material, as Maimonides explicitly states in the introduction: “I have gleaned these chapters from the words of Galen and others as I remembered them during the composition of this treatise.”

Another ancient physician he was familiar with was Hippocrates, the father of medicine. After Galen, he is the second most quoted author in Maimonides’ On Asthma. More than his other writings Maimonides favored his Aphorisms, as he remarks in the commentary he composed to this work:

It is because I saw that the book of aphorisms of Hippocrates is of greater value than all his other books that I decided to explain them. These are aphorisms which every physician, and even non-physician, should know by heart. I also saw that children memorize them in school so that non-physicians also know many of them by heart like schoolchildren who learn from their teacher.

However as Galen was the ultimate authority and as most of Hippocrates’ works only reached the Arabs with Galen’s commentary added to them, it was Galen’s commentary to the Aphorisms that Maimonides commented upon. Maimonides’ commentary thus falls under the category of supercommentary. Next to these ancient physicians, Maimonides was profoundly familiar with the works of Arab physicians, such as Ibn Sinā, al-Rāzī, and especially with those of authors from al-Andalus, such as Ibn Wāfīd and Abū Marwān ibn Zuhr (Avenzoar). Ibn Sinā’s K. al-Ḳātīf fi ḏinn is a primary source for the composition of his On Hemorrhoids, as the many close parallels to Ibn Sinā’s discussion of this illness suggest. It is also one of the sources explicitly mentioned and consulted by Maimonides in his Medical Aphorisms, On Poisons, and On Coitus. In this last treatise Maimonides remarks that he has consulted Ibn Sinā to compose an ṭijā (cake or omelet) for strengthening the sexual lust, and that a patient who used it found it greatly beneficial. Next to Ibn Sinā, al-Rāzī features prominently in Maimonides’ On Hemorrhoids and On Poisons. For the composition of On Poisons Maimonides consulted his K. al-Maṣnūrī and/or K. al-Ḥākīr which has been falsely attributed to him, and for On Hemorrhoids he probably used al-Rāzī’s lost monograph on this ailment. Of the Arabulian physicians Ibn Wāfīd (11th century) from Toledo was consulted by Maimonides for a list featured in Medical Aphorisms – of two hundred and sixty-five drugs to be applied internally and twenty drugs to be applied externally, which are common in all places and which every physician should know by heart. Ibn Wāfīd was also a major source consulted by Maimonides for the explanation of the names of drugs in his Glossary of Drug Names. But Maimonides mostly appreciated...
Ibn Zuhr. He regarded him as an authoritative source he could rely on for recommending certain recipes as he had gathered so much experience. Maimonides says so explicitly in his Medical Aphorisms Treatise twenty-five when quoting a long list of remedies belonging to the so-called "Dreckapotheke" in the following words:

Abū Marwān b. Zuhr has mentioned many specific properties [of remedies] which he tested. He was one of the [great] empiricists. His son told me amazing things about the precision and diligence in matters depending upon experience. Therefore, I thought it a good thing to mention them in his name, although some of them have been mentioned by others before. However, he is the one who verified these experiential matters.37

The intimate knowledge of the medical literature, ancient and contemporary, exhibited by Maimonides, suggests lifelong study and devotion to the subject, as Maimonides bears witness to in his well-known letter to his student Joseph Ben Judah Ibn Shimon:

When I come [home] to Fustat, the most that I can do during what is left of the day and the night is to study that which I may need to know from the medical books. For you know how long and difficult this art is for someone who is conscientious and fastidious, and who does not wish to say anything without first knowing its proof, its source [in the literature], and the type of reasoning (waqf al-qiyās) involved.38

Private study was common practice in the medieval Middle East. One famous Egyptian doctor, called Alī ibn Ridwān (d. 1061), even held that studying from books was preferable to working under the supervision of teachers.39 This opinion, however, was not generally

accepted. The actual subject matter of the medical studies can be reconstructed from the inventories of doctors' libraries, as well as from actual remnants of medical books preserved. The main impression we get from these lists is that of the paramount authority of the Arabic translations of the works of Hippocrates and Galen. Studying medicine meant in the first place memorizing selected writings of Hippocrates and even more of Galen. Next to these classics, a serious student would study their pre-Islamic and Islamic commentaries, as well as the later Greek doctors and the renowned doctors of the Islamic period. Maimonides' theoretical and practical training thus fits well within the general pattern of his time and society. But in spite of his lifelong study, Maimonides was deeply aware of the fact that for one physician it was almost impossible to master the entire medical art, to memorize its different parts and to apply this theoretical knowledge to every individual case. Comparing his generation with Galen he exclaims in his On Asthma:

And if Galen – with his excellent intellect and long experience in the practice of medicine, his devotion to this art, and his strong aspirations [to excel] in it, casts doubts on his own practice and is tentative about it, how much more should this be the case in our generations, in which physicians have only very little experience, while [at the same time] much memorizing is needed, since the different parts of medicine have become so lengthy! Consequently, a lifetime is too short to attain perfection in even one part of it...40

One way in which Maimonides tried to solve the conflict between the high demands set by the medical art and human imperfection to master the entire art is by limiting the information which a doctor should have at hand to the essential. Thus, he provides a selective list of two hundred and sixty-five drugs taken from Ibn Wafid, mentioned above. In the same vein, Maimonides remarks in On Poisons that he will only mention a few remedies, small in number but large in benefit, because an accumulation of medicines necessarily causes that they cannot be remembered,41 and that one has to

37 Medical Aphorisms 22.25 (forthcoming ed. and trans. Bos); see also On Poisons 78 (forthcoming ed. and trans. Bos), and below.
39 Cf. Meyerhof, The medical works of Maimonides 207.
41 The importance of memorization in the context of the medical art is repeat-
rely on books to look them up when one needs them. Another way to solve the conflict is through the combined effort of a number of physicians.\textsuperscript{42} In his \textit{On Asthma}, Maimonides says so explicitly when he remarks that if the physicians gather together, as in the case of kings and rulers, and debate and argue until they have come to a decision about what should be done, it is most appropriate and best. For then the patient benefits from the sum of their correct judgements, since no single physician can remember everything that he has learned, and this art is difficult for most scholars not with respect to understanding it but with respect to remembering it, because it requires a very good memory. Maimonides' remarks about rulers consulting more than one physician was common practice in the world in which he lived.

Maimonides considered theoretical study as an essential part of the medical art, since the treatment of every individual case had to be deduced by means of analogical reasoning (\textit{qiya\"a}) from general rules formulated in the medical literature. Thus, a physician had to be familiar with this literature in order to be able to treat his individual patient.\textsuperscript{43} This also explains why he held the so-called empiricist-physicians, who relied instead on observation and experience alone and used the inductive method, in such low regard and warned against the detrimental effect of their practices time and again. Maimonides remarks:

And hence [in these kinds of things] the empiricists, who do not employ analogical reasoning, commit errors, so that sometimes [their treatment] is successful by mere chance and at other times it is not successful. Therefore, someone who places himself in the hands of an empiricist-physician who does not know the rules of analogical reasoning is like a sailor who surrenders himself to the blowing of the wind, which does not occur according to analogical reasoning. Sometimes the blowing of the wind makes the sailor arrive at his destination in the best possible way, but at other times it is the cause of his drowning. I have drawn your attention to this merely because people are often duped by the empirical treatment of the empiricists. Some of them escape unharmed, but others die, [all entirely] by chance.\textsuperscript{44}

Our information about his own medical practice and experience, about his actual treatment of certain patients, is scant.\textsuperscript{45} In most cases he relies for the treatment recommended by him on the experience gathered by other physicians. Only once in a while do we get an impression of his practical experience as a doctor, especially in the context of certain recipes he composed or certain medicines he tested. An example is a quotation in the \textit{Medical Aphorisms} from one of the "Rules in hortatory form" (\textit{wa\'ṣiyah}) gleaned from the "\textit{Wa\'ṣiyah}", a lost work composed by Abū l-\'Alā' ibn Zuhr (d. 1131) for his son Abū Marwān (d. 1162). For when Abū l-\'Alā' remarks:

It's a mistake to use musk as part of purgatives, and similarly to drink it with wine. Those who compound this remedy [and administer it] are misakaen, because they want to strengthen the organs and to let the medicine rise to the head, but forget that the effect of these purgatives is carried to the major organs, and sometimes such an organ cannot tolerate this and [the patient] is killed.\textsuperscript{46}

Maimonides comments:

This is correct if the purgation is done by poisonous drugs, such as pulp of colocynth or turpith (\textit{Homoec turpethum}) because of their poisonous effect; or by strong drugs, such as laurel (\textit{Laurus nobilis}), because of its strength. But safe drugs, and especially agaric which is good for poisons, are very beneficial if imbibed in wine. I have done so several times \cite{46} and used such a drug in order to cleanse the head, and saw that it is very effective and that it cleanses the brain to a degree any <other> drug is incapable of. Moreover, the patient taking this drug
found new energy and dilation of the soul. Therefore, consider the specific properties of the drugs which you administer.49

In the Medical Aphorisms Maimonides remarks that “it is his practice to heat the oils ‘au-bain-Marie’ because otherwise their strength would be lost”, when he comments upon Galen’s statement that “if someone suffers from indigestion and the like and from a burning in the stomach which is so severe that one imagines that there is an inflamed tumor over there, he will benefit from a salve prepared with quince oil”.50 This example shows us that at least occasionally Maimonides prepared his own salves and medicaments. As we know from the Genizah, even famous physicians did so. In his On Hemorrhoids, Maimonides prescribes an electuary for his anonymous patient, of which he explicitly remarks that it was composed by himself for this occasion.51 In On Poisons, he relates that he has tried the mineral bezoar – a stone about which wondrous things are related in the books of later [physicians] – but that none of them was found to be true.52 For he tried all the [different] types of this mineral stone against scorpion bites, but they were not beneficial at all. In On Cuts, Maimonides recommends a compound remedy consisting of forty dirhams of manna dissolved in one ratl of fresh milk to increase sexual vigour, taken from the works of other physicians,53 but adds that he has personally mixed it with a quarter of a dirham of pounded close and that it had a good effect.54 In On the Elucidation of some Symptoms, he remarks in the context of the composition of the oxtongue remedy prepared with wine, that he has tried and verified as true that light wine, when mixed with a little rose water, about a tenth, elates the soul, does not intoxicate, does not harm the brain, strengthens the stomach, and increases all the virtues ascribed to wine.55 In a unique case, Maimonides tells us in his On Asthma about his successful treatment of a young woman suffering from asthma attacks, through the administration of an electuary for cleansing the lungs and the brain, composed by himself.56 At a certain stage of his medical profession, Maimonides clearly felt confident enough to compose and apply his own medications instead of those recommended in the medical literature.

The following point I would like to discuss concerns his recommendation of, or perhaps one should say reference to, remedies belonging to the so-called “Dreckapotheke”, that is remedies consisting of different parts of animals, their droppings and urine.57 These remedies are featured as part of a long list in Treatise twenty-two of his Medical Aphorisms and are derived from Galen, Abu Marwán b. Zuhr and al-Tamimi, and seem at first sight to be completely misplaced in Maimonides’ medical system and therapy. For example, in Aphorism 1 quoting from Galen’s De theriaca ad Pisonem, he states: “Mouse heads, burned and kneaded with honey, and rubbed on [the spot affected by] alopecia, stimulate hairgrowth. Similarly, mouse excrement, if pulverized in vinegar, is beneficial for alopecia. Viper skin is also good for it, if it is ground with honey.” Even more amazing is the following recommendation derived from Galen’s De simplicium medicamentorum temperamentis ac facultatibus: “I know someone in our times who [treated patients] by giving them burned human bones to drink without informing them about this, lest they turn away from [taking] it. This man used to cure with these burned bones many [patients] suffering from epilepsy and pain in the joints.”58 The question arises how to reconcile Maimonides’ listing of these remedies, which we would classify as working through some sort of magic and/or superstition, with his opposition to and condemnation of magic and superstition, and his reputation as an eminently rationalist.

51 On Hemorrhoids 4-3 (forthcoming ed. and trans. Bos): “I have composed an electuary for my Master that should be taken constantly on consecutive days except during strong heat and strong cold, for [then] it is not necessary [as it is not effective].”
57 For an extensive discussion of this subject see the introduction to Medical Aphorisms, Treatises 22–25 (forthcoming ed. and trans. Bos).
philosopher and physician. A possible answer to solve the apparent contradiction between the application of these “magical” ingredients and Maimonides’ rationalist attitude, lies in the fact that for Maimonides these remedies do not belong to the realm of magic, are not effective through some sort of supernatural force. For with Galen he holds that these ingredients operate through the whole of their substance and are effective through their specific property, contrary to “natural” remedies which operate either through their matter, or through their quality or power. Thus he introduces the list of these animal parts by stating in the name of Galen that we find medicines which are effective through their powers and we find other medicines which are effective through their total substance. A similar statement can be found in a lengthy theoretical discussion in his Commentary on Hippocrates’ Aphorisms, where Maimonides calls the specific property through which these remedies are effective their “specific form” (al-yūrah al-nawīya), and adds that these remedies operate through the whole of their substance, contrary to remedies which operate either through their matter, or through their quality. And in his On Poisons he remarks:

It cannot be denied that a hot or cold remedy can be beneficial for any poison, whether hot or cold, because the action of these remedies which save from a fatal poison is not dependent upon their quality but upon their whole substance as the physicians declare, or upon their specific property, as they say. This means, as the philosophers have explained, that these remedies are effective through their ‘specific form’.

While the pharmacological action of remedies which operate through their matter or quality can be assessed by a physician, this is not the case with the remedies effective through their specific property which lack a pharmacological basis. Thus, their effectiveness can only be learned through experience. Although Maimonides was an eminent rational philosopher and physician, he allows the application of these remedies, since as he says, “experience has shown them to be valid even if reasoning does not require them.” One is reminded of his statement in the Guide of the Perplexed about practices which the sages allowed:

You must not consider as a difficulty certain things that they have permitted, as for instance the nail of one who is crucified and a fox’s tooth. For in those times these things were considered to derive from experience and accordingly pertained to medicine and entered into the same class as the hanging of a peony upon an epileptic and the giving of a dog’s excreta in cases of the swelling of the throat and inflammation with vinegar and marcasite in cases of hard swellings of the tendons.

For Maimonides, experience, i.e. the repeated successful application of these kinds of medicines by reliable ancient or contemporary physicians, is the ultimate criterion allowing for or disallowing them, as one may conclude from his introduction to the list of remedies recommended by Ibn Zuhri mentioned above. In On Poisons, Maimonides recommends, in the name of Ibn Zuhri, emerald for strengthening one’s teeth and one’s heart, if kept in the mouth, and for pain in the stomach, if hung on the stomach from the outside. As noted above, Maimonides considered Ibn Zuhri as an authoritative and reliable source because he had lengthy experience, was the greatest amongst men in testing drugs, and was one who devoted himself to this more than any other. To what extent Maimonides considered the experience gathered by Ibn Zuhri as reliable can be derived from the recommendation of certain practices which we would immediately relegate to the realm of superstition. Such a practice is the one quoted in his name in the Medical

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58 Maimonides’ Shābī’ fiṭrat Abu Qāqā (Commentary on Hippocrates’ Aphorisms) 1, 14–19 (edition Schlowski).
Aphorisms: “Looking in the eyes of a wild ass gives a lasting healthy vision, and is beneficial against the formation of a cataract [in the eyes]. He says: This is true without any doubt.” 65 The same recommendation features in a slightly different version without source reference in Maimonides’ On the Regimen of Health: “The wild ass has a great specific property in strengthening vision; this has been verified by experience. The consumption of its flesh and holding one’s eyes over the vapor of its cooking meat strengthens vision and opens obstructions of the hollow nerves, and if one looks into the eyes of the wild ass for a long time, it strengthens vision and removes its defects. This has been verified by experience.” 66 Similarly, al-Tamimi’s K. al-murshid mentioned above is considered by Maimonides as an authoritative source one may consult, even though he is not an original author and sometimes makes mistakes, but yet was allegedly very experienced. 65

The attitude of Galen, Maimonides’ major source for the list of these remedies, towards the employment of animal and human materia medica, is ambivalent. On the one hand he speaks out against yontea (magic), but on the other hand accepts magical remedies from authoritative predecessors, while interpreting them according to his own system. 66 While authority and experience is the criterion for allowing the application of animal and human materia medica as a remedy, Galen asserts that these substances, like all things, have natural powers and that these can be used medicinally. Thus feces have a strong expulsive force. But one does not have to use them, especially not the strong-smelling ones like those of human beings, disgusting as they are, since other medicines are available. However, those feces that do not stink, like those of cows, goats, ground-crocodiles, and dogs fed on bones, have been proven useful by himself

...and others. 67 Similarly urine; while he considers the drinking of the urine of wild boars as something horrid, since it is the strongest smelling of all urines, he prescribes human urine, the weakest of all urines, especially for healing suppurating sores, on the basis of his own authority and experience. 68

Maimonides was a doctor with an open and independent mind who did not hesitate to criticize doctors he otherwise held in high esteem. 69 This may be inferred from a statement in the Commentary to Hippocrates’ Aphorisms where he rebukes Galen for refraining from criticizing Hippocrates and for explaining certain statements in the exact opposite of their intended meaning, in order to justify the correctness of the statements. 70 Thus Maimonides does not hesitate to criticize Hippocrates and remarks that among his aphorisms are some which are doubtful and require explanation, some which are self-evident, some which are repeated, some which are not useful for medical therapeutics, and some which are absolutely erroneous viewpoints 71. Another more contemporary doctor Maimonides was critical of is al-Tamimi, as we stated above. But it was especially Galen who was the target of his criticism, both in medical and philosophical issues. His critique of Galen is largely concentrated in Treatise twenty-five of the Medical Aphorisms. This Treatise actually consists of two parts, the first part consisting of Aphorisms 1–58 and 69–72, and the second part covering Aphorisms 59–68. The first part contains Maimonides’ critique of the medical inconsistencies found in Galen’s works, and the second part contains Maimonides’ refutation of Galen’s denial of the Mosaic doctrines of God’s omnipotence and creation of the world. Maimonides was certainly not the first to criticize Galen in his capacity as a medical doctor. In fact, there is a long

tradition of Galenic criticism on medical issues. Although the Byzantine physicians had adopted and accepted Galen's medical system, we do hear about individual criticisms, mostly the result of their practical experiences as physicians. Alexander of Tralles criticises Galen for prescribing warm compresses in the case of someone suffering from corruption of the stomach and indigestion accompanied with ephemeral fever, caused by heat. He remarks analogically that "the truth must be honored before everything else." Amongst the Arab physicians, an important critic of Galen was al-Razi (865–932). His criticism can be found in a special monograph devoted to the subject, entitled *K. al-shukuk 'ala Jalīnūs* (Doubts concerning Galen). In this work the author sometimes continues the tradition of scholarly discussions based on the Aristotle-Galen controversy. At other times, however, his criticism is the result of his personal clinical experience. Al-Razi used to collect the notes of his cases and to check them against Galen's theories. Maimonides takes al-Razi's criticism of Galen as the starting point for his own account of Galen's medical inconsistencies. According to Maimonides, al-Razi's criticism is mostly directed against Galen's way of reasoning and his logical conclusions, and not against his medical inconsistencies. These *shukuk* are therefore not medical problems but philosophical ones. He adds that Ibn Zuhru and Ibn Riddīn already solved those problems, and that he does not intend to deal with any of them because the whole topic is a waste of time. Maimonides states that his intention is to deal with medical problems, since Galen was the master (*ilm amr*) of the art of medicine, in which field he should be followed. He should not be followed in any other field. Maimonides clearly thought that al-Razi should not have attacked Galen for his philosophical and logical inconsistencies, but rather for his medical ones. Moreover, he thought that al-Razi had no authority to attack Galen since he was only a physician and not a philosopher. Maimonides' harsh words of criticism against al-Razi are certainly unjustified. Al-Razi not only criticizes Galen for his logical philosophical arguments, but also for practical-medical ones. In this case, al-Razi bases his criticism on the mentioned case-notes he assembled as a practising physician. Moreover, although Maimonides remarks that he will not deal with al-Razi's criticism since it is a waste of time, he nevertheless attacks him for his criticism of Galen's theory that the Greek language was superior to all of the other languages which in comparison sound like the grunting of pigs, the croaking of frogs, or the cawing of the raven (Apotropisms 56 and 57). And Maimonides' attack on Galen for letting blind passion dominate the perceptive faculties of the mind, and thus believing in the superiority of the testicles over the heart (Apotropisms 25 and 26), bears close similarity to al-Razi's rationale for the criticism of the works of the ancients by modern scholars, namely the occurrence of errors in their works caused by passion overwhelming their reason.

Although Maimonides' critique of Galen on medical issues is defense of Galen against the attack of al-Razi and tried to solve the doubts raised by him (hall al-shukuk); see Bürgel, "Averroes contra Galenum" (cit. n. 31) 285.


74 Ibid., English transl. Temkin, op. cit., p. 118.


77 Ibn Zuhru (d. 1068), Abu ‘l‘Ala ibn Zuhru, and other physicians came to the
largely concentrated in Treatise twenty-five, it is certainly not lacking in the other Treatises of his Medical Aphorisms. For instance, in Treatise one, Aphorism 34, he criticizes Galen for not having solved the question how the will of someone who is asleep or absent-minded can be abolished and yet he carries out voluntary movements. In Treatise nine, Aphorism 127, Maimonides criticizes Galen for not mentioning Aristotle's discussion of the topic of spasms occurring to babies in the latter's De animalibus 11x. In this case Maimonides' critique is unjustified, as Galen dealt with this matter extensively in his commentary on Hippocrates' Prognostics 111, 34. Thus one can say that Treatise twenty-five forms a certain continuity with the previous treatises, and not an absolute break, as current research has suggested. Moreover, several of the Aphorisms discussed in Treatise twenty-five already feature in the previous treatises in a different context. As to the actual critique itself, Maimonides is very careful in blaming Galen for the inconsistencies found in his works. In fact, he recognizes that these inconsistencies may also go back to a mistake by the translator of Galen's works into Arabic or to his own bad understanding.81 Thus he remarks in Aphorism 11 that Galen's inconsistency in prescribing bleeding from the leg in the case of epilepsy, vertigo or obstruction can be possibly explained from an omission by the translator of special conditions allowing for such a bleeding. And when the inconsistency obviously goes back to Galen himself, Maimonides remarks that it is due to unmindfulness that happened to Galen, as nobody is free from these things except for exalted human beings.82 Nevertheless, at times Maimonides criticizes Galen severely and in an ironic tone, as in the case of Galen's belief in the superiority of the testicles over the heart mentioned above, where Maimonides exclaims:

Consider then, ye who possess insight, [whether this is correct] because if the heart would be excised from a living being, could he remain alive to live a good life? That is, could he have sexual intercourse and show his male sexual potency and not lack any vital function? But if his tes-

tiles are cut off, he remains alive as we see [in the case of] eunuchs. Are then the testicles more eminent than the heart?83

And in a thorough analysis of Maimonides' criticism concerning Galen's discussion of putrefactive fevers,84 Langermann has shown that Maimonides' criticism is severe and thorough.85 Yet, sometimes his criticism is undeserved and incorrect. For instance, in Aphorism 28 Maimonides attacks Galen for believing that a third type of epilepsy is a mere quality without any substance whatsoever that happens in the brain. Maimonides' account is not a fair reflection of the Galenic statement in this matter. In fact, Galen does not consider the third type of epilepsy to be merely a quality. He raises the question whether types two or three are the result of an insubstantial quality or of some actual substance. Like Pelops, he believes in at least some substantial change, even if the result is achieved by a sort of sympathy. The cold breeze arising to the brain is thus something physical, a symptom of ongoing changes. One might summarize Maimonides' criticism as a scholastic exercise, sometimes bordering upon casuistry. Maimonides was thus part of the medieval Arabic tradition of a close scrutiny of texts which was surprisingly similar to the methods used in renaissance Italian universities, as Langermann has pointed out.86

Summarizing the information we can glean from his medical works concerning his medical biography, one gets the impression that his cautiousness and reticence to actually treat patients do not stem from a lack of experience in the actual treatment of patients, as he has been accused of, but from a deep awareness of the inadequacy of the physician to master, to memorize the entire medical art, and who was therefore liable to make mistakes in both diagnosis and therapy. While such mistakes could be corrected in the case of a mild treatment, they were often fatal in the case of a more drastic

treatment, as he knew from his own experience. Hence his repeated warnings against the application of such drastic means of treatment, especially purgation and bloodletting. On the other hand, it is important to point out that although Maimonides stresses the need of continuous theoretical study and is cautious in actually treating patients, he was at the same time very interested in gathering practical information, mostly of a pharmaceutical nature, and often tried out certain medicines he knew from medical literature but was not sure whether they were reliable, and composed new ones if necessary.

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