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Abū Bakr Muḥammad ibn Zakariyyā' al-Rāzī: On Phlebotomy

Edition, translation and commentary

Björn, Juhan; al-Rāzī, Abū Bakr Muḥammad Ibn Zakariyyā'

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Abū Bakr Muḥammad ibn
Zakariyyā' al-Rāzī
On Phlebotomy

EDITION, TRANSLATION AND COMMENTARY
BY
JUHAN BJÖRN

The objective of this study is to present a text-critical edition of the medieval treatise *Maqāla fī l-Faṣd*, 'On Phlebotomy', attributed to Abū Bakr Muḥammad ibn Zakariyyā' al-Rāzī (865-925), a prominent physician and scholar known especially for his expertise in medicine. His contributions as a distinguished medical author and devoted clinician earned him recognition in both Arabic and Latin medical literature, leading to the Latin name, Rhazes.

This edition is based on al-Rāzī's unique manuscript preserved in Ms. Escorial 857 (fol. 1-22). By carefully analysing its content within the framework of Hippocratic-Galenic medicine, this research offers valuable insights into medieval medical practices. The emphasis has been on clarifying the theoretical aspects of *Maqāla fī l-Faṣd* by connecting it to its theoretical foundation. The treatise focuses on the practice of *faṣd*, or phlebotomy (in Greek *phlebotómos*), exploring its benefits, methods, appropriate timing, and related therapies. However, a comprehensive linguistic analysis has not been pursued.

This research contributes to the preservation of history of medicine, revealing the wisdom of Abū Bakr Muḥammad ibn Zakariyyā' al-Rāzī and his impact on medical knowledge. This work makes a significant contribution by uncovering valuable insights into medieval medicine, emphasising the importance of studying, editing, and translating old manuscripts.



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مقالة في الفصد

Abū Bakr Muḥammad ibn Zakariyyā' al-Rāzī

On Phlebotomy

Edition, translation and commentary
by
Juhan Björn



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On Phlebotomy

Edition, translation and commentary
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For my grandparents.

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Abstract

The objective of this study is to present a text-critical edition of the medieval treatise *Maqāla fī l-Faṣd*, ‘On Phlebotomy’, attributed to Abū Bakr Muḥammad ibn Zakariyyā’ al-Rāzī (865-925), a prominent physician and scholar known especially for his expertise in medicine. His contributions as a distinguished medical author and devoted clinician earned him recognition in both Arabic and Latin medical literature, leading to the Latin name, Rhazes.

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Key words: History of medicine, Graeco-Arabic medicine, text-critical edition, Arabic, Abū Bakr Muḥammad ibn Zakariyyā’ al-Rāzī, phlebotomy.

Preface

The objective of this study is to present a text-critical edition, translation, and commentary, based on the unique copy of the treatise known as *Maqāla fī l-Faṣd*, ‘On Phlebotomy’, a medieval Arabic medical treatise attributed to Abū Bakr Muḥammad ibn Zakariyyā’ al-Rāzī. The content is heavily based on Hippocratic-Galenic medicine and on the doctrine of humoral pathology.

I own great respect and gratitude to my supervisors, Lena Ambjörn and Gerrit Bos, for their assistance and guidance during the process of writing this doctoral dissertation. I am privileged to have had the opportunity to work alongside them both. Professor Lena Ambjörn’s expertise has enhanced my comprehensive understanding of the manuscript. It was also during studies with Professor Ambjörn that my enthusiasm for manuscript studies first was ignited. I am deeply grateful for her collaborative efforts in reviewing the entire edition and its translation, and for providing me with valuable sources, insights, and recommendations. Having Professor Ambjörn as my teacher and supervisor has been a privilege, offering me valuable guidance as I set out on my path as a young academic. Professor Gerrit Bos’s initial suggestion that I could work on *Maqāla fī l-Faṣd*, taking advantage of my proficiency in both Arabic and Hebrew, marked the starting point of this journey. Professor Bos’s guidance and encouragement to explore Arabic and Hebrew manuscripts have significantly shaped my involvement in this field of study. Additionally, his provision of valuable sources for interpreting and translating the text, as well as his review of my translation, have contributed immensely to bridging the gaps and ensuring a thorough understanding of the intended meaning within the text.

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I am also grateful to Robert Rae for his attention to detail and commitment to ensuring the coherence and language precision of this dissertation. Any shortcomings, if present, are mine.

The Arabic alphabet has been transliterated as below:

k	ك	ḍ	ض	d	د	a, ’	أء
l	ل	ṭ	ط	ḏ	ذ	b	ب
m	م	ẓ	ظ	r	ر	t	ت
n	ن	‘	ع	z	ز	ṭ	ث
h	ه	ġ	غ	s	س	ǧ	ج
w, ū	و	f	ف	š	ش	ḥ	ح
y, ī	ي	q	ق	ṣ	ص	ḫ	خ

Background

Graeco-Arabic medicine¹

The rise of the Abbasid dynasty around the year 750 AD, followed by the foundation of Baghdad in 762 AD, led to a historical Graeco-Arabic translation movement that lasted until the end of the 10th century.² During this over 200-year-long period, nearly all scientific Greek works that were available in the Middle East and Eastern Byzantine Empire were translated into Arabic.³ Not only was this translation movement a significant undertaking *per se*, but even more so due to the loss of many Greek original works, the legacy of which was carried on through the translations.⁴

During the Medieval period, approximately from the middle of the seventh century until the end of the 15th century, the Islamic Empire covered a vast geographical area that extended from Spain and North Africa all the way to India and Central Asia, consequently leading to a pluralistic society in which people from different religions and cultures speaking various languages co-existed. The diverse population combined with factors such as social class, climate, and way of life – whether urban, rural, or nomadic – were just a few aspects that influenced the general health of the community, including the medical practices applied. Whether a patient would seek medical care based on scholarly theories or choose to rely on

¹ While some scholars use the term “Islamic medicine” to describe the medical tradition that emerged in the Islamic Empire, this term may have limitations and could be perceived as implying an exclusive association with Islam. However, as Pormann & Savage-Smith (p. 2) point out, the term is not limited to practitioners of Islam and does not exclude practitioners of other religions or cultures. I have chosen to use the term “Graeco-Arabic medicine” instead, which emphasises the continuity of the Graeco-Roman medical tradition in this development. However, I acknowledge that any term could be misunderstood or have limitations. While there currently is no term that explicitly recognises the multiple sources of this tradition, it is important to clarify that the term “Graeco-Arabic medicine” is not meant to imply that only Greek and Arabic traditions were involved, but rather to highlight the prominent role of these two in the development of the medical tradition. Readers who prefer different terminology may substitute my choice of “Graeco-Arabic medicine” with the term of their choice that they deem most appropriate and accurate in describing the medical tradition in question.

² Gutas, *Greek Thought*, p. xiii.

³ Gutas, *Greek Thought*, p. 1.

⁴ Gutas, *Greek Thought*, p. 1.

folk medicine and magic also depended on time and place.⁵ While the Bedouins of the desert relied on pre-Islamic medical tradition, the urban elite in Baghdad developed a sophisticated foundation of medical theory and practice.⁶

The translation of the Greek medical texts had a central role in the emergence of the Graeco-Arabic medical tradition, which incorporated aspects from all over the Islamic Empire, including Indian, Persian, and Syriac sources.⁷ Greek texts were often translated into Arabic through Syriac translations, whereas Indian, and later on even Chinese, texts were translated through Persian translations.⁸ The Graeco-Arabic translation movement also functioned as an incentive for establishing a comprehensive Arabic technical terminology, since no precise terminology existed prior to this endeavour. Within the first one hundred years of the translation movement, the foundation of Arabic medical vocabulary, equal to the Greek one, had emerged.⁹ Owing to the efforts of the translators, the Arabic language, previously known as the language of the *Qur'ān*, had developed into a language through which it was also possible to transmit medical, scientific, and philosophical ideas, consequently transforming into the scientific *lingua franca* of the Empire.¹⁰ Graeco-Arabic medicine was developed and practiced by all scholars in the Islamic Empire, whether they were Arab, Persian, Christian, or Jewish, and whether they would speak Turkish, Syriac, or Greek, most of them would write in Arabic, in a language that connected both medical practitioners and patients, overlooking origin, language, religion, and culture.¹¹

This medical tradition did not remain only within the borders of the Islamic Empire, as it was introduced in Europe in the late Medieval era, forming the core of Western medicine. In other words, modern Western medicine, despite the radical changes over the last two centuries, is based on Graeco-Arabic medicine, that in turn was inspired by the Graeco-Roman medical tradition.¹²

⁵ Pormann & Savage-Smith, pp. 1-2.

⁶ Pormann & Savage-Smith, p. 6.

⁷ Pormann & Savage-Smith, pp. 36-37.

⁸ Pormann & Savage-Smith, p. 35.

⁹ Pormann & Savage-Smith, p. 31.

¹⁰ Pormann & Savage-Smith, p. 33-35.

¹¹ Pormann & Savage-Smith, p. 2.

¹² Pormann & Savage-Smith, pp. 3-4.

Humoral pathology

A few fundamental principles of the Greek medical tradition are worth explaining in order to understand the content of this work. Humoral pathology, i.e., the doctrine of the four humours, was introduced by Hippocrates of Cos (mid-fifth century BC) in his treatise *On the Nature of Man*, later adopted and further developed by Galen of Pergamon (129 – c. 216 AD), who became the most influential of the Greek physicians¹³ – as Temkin puts it, “no physician after Galen was comparable to him.”¹⁴ Although the origins of the doctrine of the four humours can be traced back to the Hippocratic school of medicine, it was Galen who emphasised the four humours as *the* Hippocratic humours, together with their association with the Aristotelian qualities.¹⁵ Galen’s significance in medical practice lasted until the 19th century,¹⁶ and still remains in many parts of the world.¹⁷ According to Temkin, Galen was assigned to the Greek East due to the centrifugal forces that acted to divide the Roman Empire into Latin West and Greek East. The influence of Galen was not widely present in the West until the 11th century, while its development can be traced back to the Greek centres of learning, such as Alexandria and Constantinople. Later on, it spread towards Syria and the Islamic countries, where the scholars incorporated Greek science into their own practice, further influenced by the Arabic language.¹⁸ Right from the start, medicine in the Arabic world was primarily associated with Galenic medicine¹⁹ – his treatises, first translated into Syriac and then into Arabic, served as a foundation for Graeco-Arabic medicine.²⁰ Galenic medicine was coupled with Aristotelian philosophy²¹ – Galen believed that philosophy was essential for medical practice, as one could not become a skilled doctor without a comprehensive understanding of logic, physics, and ethics, that were considered to be the three fundamental branches of philosophy.²²

¹³ Pormann & Savage-Smith, p. 9. According to Siegel, the notion of the four humours can be attributed to Pythagoras (530 B.C.) and his school, which are considered the originators of this concept. However, the Hippocratic treatises were not consistent regarding the number of the humours. Additionally, Praxagoras considered there to be nine or ten humours (Siegel, p. 216).

¹⁴ Temkin, p. 125.

¹⁵ Temkin, p. 103.

¹⁶ Brain, p. 2.

¹⁷ Temkin, p. 1.

¹⁸ Temkin, p. 59.

¹⁹ Temkin, p. 70.

²⁰ Hankinson, *CCG*, p. xv.

²¹ Temkin, p. 70.

²² Hankinson (*Meth. Med.* introduction), p. xix-xx. To demonstrate the importance of philosophy in medical practice, Galen wrote his treatise ‘That the Best Doctor is also a Philosopher’ (*Opt. Med.*) (Hankinson, p. xx, 7). For an Arabic edition, see Peter Bachmann, ‘Galens Abhandlung darüber, daß der vorzügliche Arzt Philosoph sein muß’, Göttingen 1966. Logic, for Galen, is ‘an instrument for establishing truth’ and being able to deal with any problem, “whereas without logic it is impossible to distinguish truth from falsehood” (Temkin, p. 22).

The most significant aspect of Galen's system is that nature both creates and controls the bodies of all living things,²³ followed by the importance of the balance of the four humours. The four humours and the qualities with which they are associated have opposite characteristics. Yellow bile is hot and dry; blood is hot and moist; phlegm is cold and moist; whereas black bile is cold and dry. Of these substances, yellow bile, blood, and phlegm, are actual components of the body, whereas black bile was created to complete the harmony of four.²⁴ Moreover, the humours were combined with an element and a temperament.²⁵ Among the celestial bodies, there was a fifth element, namely *aether*, that was considered more divine than the earthly elements, and that was believed to occur in all living creatures, in the so-called innate heat, as well as in the semen, that was thought to have "the power of generating life just as the sun's heat has."²⁶

The primary task of blood was to serve as nutrition for the body.²⁷ Phlegm was recognised as a corrupt moisture, mucus, that was apparent in various body fluids. Yellow bile was understood as a foam that develops while blood is being formed in the liver, half of it flowing with the blood whereas the other half was thought to find its way to the gallbladder. Black bile was considered to be a dark substance that, similarly to yellow bile, was produced during the formation of blood in the liver, half of it remaining in the blood while the other half ended up in the spleen. Accordingly, the blood flowing in the veins was a mixture of blood, yellow bile, and black bile.²⁸

Phlebotomy, described by Garrison as one of the oldest and most common therapeutic devices with its origin lost in antiquity, served as a central medical practice for dealing with the four humours.²⁹ However, it was Galen, following Hippocrates, who established the antique tradition of phlebotomy as a fashionable practice.³⁰ Accordingly, phlebotomy was not a new practice *per se*, but it was contemporary to apply the method to treat such a wide variety of diseases.³¹ Galen used phlebotomy as a form of treatment for both physical and psychological conditions, such as illnesses in the parts, sciatica, rheumatism, insanity, melancholia,³² hepatitis, angina, ophthalmia, and epilepsy, and according to his records, he successfully treated a patient suffering from anorexia nervosa as well.³³

²³ Brain, p. 7.

²⁴ Brain, pp. 6-7.

²⁵ Siegel, p. 218.

²⁶ Brain, p. 6.

²⁷ Brain, p. 123.

²⁸ Pormann & Savage-Smith, p. 44.

²⁹ Garrison, p. 1.

³⁰ Brain, pp. 1-2.

³¹ Garrison, pp. 8-9, Brain, p. 145.

³² Garrison, p. 10.

³³ Brain, p. 129; 133.

The balance of the four humours was seen as an essential factor for health.³⁴ In his book *On Treatment by Venesection*, Galen mentions that the “function of the art of medicine is both to restore all the natural functions of the parts of the body when they have been corrupted, and to preserve them once they have been restored.”³⁵

An excess amount of humours could be removed by phlebotomy, i.e., by opening a vein or an artery,³⁶ through cupping, with or without scarification,³⁷ or by applying a leech.³⁸ Galen believed that restoring the balance between the humours was essential, because he saw disease as an unnatural state of the body, while health was the natural state. In other words, a body afflicted by disease was not in its natural state, and restoring balance was necessary to bring it back to health.³⁹ As Brain puts it, “Disease and health, for Galen, are defined in terms of nature.”⁴⁰

Another fundamental concept in explaining how the body functions in the Greek medical theory was *pneuma*. Galen identifies three types of *pneuma*: vital *pneuma* that is generated in the heart and in the arteries, that is produced from the inhalation and vaporisation of the humours; psychic *pneuma*, that is generated from a further refinement of the vital *pneuma* in the retiform web through the carotid arteries, reaching the ventricles of the brain;⁴¹ and natural *pneuma*, generated in the liver and distributed through the veins.⁴² Galen’s supreme understanding of anatomy was something he valued highly, and that he studied through dissecting humans and animals.⁴³

In addition to *pneuma*, Galen’s physiological system, explained in his *De usu partium*, is based on the idea that each division of the soul has a special power or faculty. He believed that the brain had the psychic faculty, the heart the vital faculty, and the liver the natural faculty. Additionally, most of the other body parts had their faculties, such as the attractive faculty to attract nutriment, retentive faculty to hold the nutriment, and expulsive faculty to get rid of surplus material. Galen assigned these faculties to various parts of the body, such as the uterus, the arteries, the muscles, and the veins, while being aware that assigning these faculties did not actually explain much, but rather served as a label until the true essence of the cause behind actions could be understood.⁴⁴

³⁴ Brain, p. 7.

³⁵ Galen, *Cur. Rat. Ven. Sect.*, p. 71.

³⁶ Galen mentions that the term ‘vein’ has been applied to arteries as well (Galen, *Cur. Rat. Ven. Sect.*, p. 97).

³⁷ Cupping is thoroughly discussed in Albucasis, chapter 96 (p. 656ff.).

³⁸ Especially when applying cupping vessels is impossible (Albucasis, chapter 97, p. 674).

³⁹ Brain, p. 4.

⁴⁰ Brain, p. 4.

⁴¹ Galen, *PHP* VII 3, pp. 444-445. For an explanation how this works, see Galen, *PHP* VII 3-4, pp. 442-453.

⁴² Galen, *UP*, p. 48.

⁴³ Nutton, p. 230ff.

⁴⁴ Galen, *UP*, pp. 49-50.

Moreover, a holistic approach, as emphasised by Hippocrates, was crucial. An illness of one part of the body is not an isolated phenomenon, but connected to and affected by the whole body, its surroundings, and its activities.⁴⁵ Accordingly, Galen viewed diet, or regimen, as more than just the consumption of food and drink; he regarded it as a fundamental aspect of one's lifestyle that extended to other areas such as physical exercise, sleep, environment, and bathing.⁴⁶ He also attempted to relate the four humours to the properties of foods and their qualities, whether heating, cooling, moistening, or drying.⁴⁷ To gain a comprehensive understanding of humoral pathology, Galenic physiology, and the fundamental concepts of Graeco-Roman medicine, it is essential to refer to key works by leading scholars in the field. These works include *Ancient Medicine* by Vivian Nutton, *Galenism* by Owsei Temkin, *Galen's system of Physiology and Medicine* by Rudolph E. Siegel, and *The Cambridge Companion to Galen* by R. J. Hankinson.

Al-Rāzī

Abū Bakr Muḥammad ibn Zakariyyā' al-Rāzī (251/865 – 313/925⁴⁸ or 323/935⁴⁹) was born on the first day of Ša'bān in Rayy,⁵⁰ near present-day Tehran.⁵¹ He studied music, alchemy, and other natural sciences,⁵² and played the oud.⁵³ According to al-Bīrūnī (d. ca. 442/1050⁵⁴), al-Rāzī's interest in medicine was ignited while he was seeking treatment to cure the damage caused to his eyes as a result of frequent exposure to fire and harmful vapours during his alchemical experiments.⁵⁵ Moreover, al-Rāzī was known for his hard work and dedication to his studies, often working by lamp light, which together with his love for beans may have contributed to his later loss of eyesight, as in his later years he developed cataracts in both eyes.⁵⁶ He excelled in the study of medicine and philosophy, directed hospitals both in Rayy and in Baghdad, and composed

⁴⁵ Nutton, p. 57.

⁴⁶ Nutton, pp. 240-242.

⁴⁷ Nutton, p. 241.

⁴⁸ El-Rouayheb & Schmidtke, p. 63.

⁴⁹ Stroumsa, p. 90. The exact dates of birth and death are not certain.

⁵⁰ Bīrūnī, *Risāla*, p. 4.

⁵¹ Martín, p. 446.

⁵² Sezgin, p. 274.

⁵³ Ibn Ġulġul, *Ṭabaqāt*, p. 77.

⁵⁴ Stroumsa, p. 88.

⁵⁵ Bīrūnī, *Risāla*, pp. 4-5.

⁵⁶ Bīrūnī, *Risāla*, p. 5.

several medical works.⁵⁷ He was recognised for his achievements in medicine both in Arabic and Latin medical literature, hence the Latin name Rhazes.⁵⁸

According to Ibn al-Nadīm, al-Rāzī was unparalleled during his time, collected information on ancient sciences, especially medicine, and visited various countries.⁵⁹ Around the age of thirty, al-Rāzī travelled to Baghdad to study medicine.⁶⁰ We do not know for certain who his teacher in medicine was⁶¹ – Ibn Abī Uṣaybi‘a claims that al-Rāzī studied under ‘Alī ibn Rabban al-Ṭabarī, which poses a chronological problem.⁶² Al-Rāzī was a prolific author who constantly wrote new works.⁶³ Sezgin lists 76 works attributed to him.⁶⁴ Other titles in Latin and Hebrew translations may also be linked to al-Rāzī, but further examination is needed to determine their origin. Moreover, Ibn al-Nadīm, al-Bīrūnī, and Ibn Abī Uṣaybi‘a offer additional titles of works attributed to al-Rāzī, of which no manuscripts are known.⁶⁵ According to Ibn Abī Uṣaybi‘a, he was mostly positioned in Persia, serving the greatest kings, and it was also there he composed several of his books, among them *Kitāb al-Manṣūrī*⁶⁶ for the ruler of Khurasan and Transoxiana (*mā warā’ al-nahr*), Manṣūr ibn Ishāq, as well as *al-Ṭibb al-Mulūkī*⁶⁷ for the ruler of Tabaristan,⁶⁸ ‘Alī ibn Wahzūzān.⁶⁹ He was entrusted with the management of the hospital of Rayy before being selected to direct a hospital in Baghdad.⁷⁰ According to Ibn al-Nadīm, al-Rāzī was known for his compassion

⁵⁷ Ibn Ḡulḡul, *Ṭabaqāt*, p. 77.

⁵⁸ El-Rouayheb & Schmidtke, p. 63.

⁵⁹ Ibn al-Nadīm, *Fihrist*, p. 701.

⁶⁰ Ibn Abī Uṣaybi‘a, *Ṭabaqāt*, p. 760.

⁶¹ Sezgin, p. 275.

⁶² Ibn Abī Uṣaybi‘a, *Ṭabaqāt*, p. 760. Al-Ṭabarī died when al-Rāzī was just five years old. Perhaps al-Rāzī ‘studying under’ al-Ṭabarī should be understood as him being trained according to al-Ṭabarī’s knowledge, as a disciple.

⁶³ Goodman, Encyclopaedia of Islam. Consulted online on November 11 2022.

⁶⁴ Sezgin, p. 274ff.

⁶⁵ Sezgin, p. 292. For titles attributed to al-Rāzī in early historical sources, see 144 titles in Ibn al-Nadīm, *Fihrist*, p. 701ff.; 225 titles in Ibn Abī Uṣaybi‘a, *Ṭabaqāt*, p. 775ff., 184 titles in Bīrūnī, *Risāla*, p. 6ff.

⁶⁶ A book on anatomy, physiology, pathology, *materia medica*, general maintenance of health, diet, cosmetics, surgery, toxicology, etc. (Sezgin, p. 281).

⁶⁷ “A book on ailments and the treatment of all diseases with food and inserting drugs into food when necessary and what the patient does not hate” (Ibn Abī Uṣaybi‘a, *Ṭabaqāt*, p. 778, my translation). Listed in Sezgin, p. 286, no. 16.

⁶⁸ Ibn Abī Uṣaybi‘a, *Ṭabaqāt*, p. 770, 781. This may have happened between the years 290/902 and 296/909 (Sezgin, p. 275).

⁶⁹ Sezgin, p. 286.

⁷⁰ Ibn Abī Uṣaybi‘a, *Ṭabaqāt*, p. 762. According to Ibn Abī Uṣaybi‘a, al-Rāzī served as the director of the al-‘Aḍudī hospital, attributed to the king ‘Aḍud al-Dawla, and played a crucial role in choosing its location by hanging meat around Baghdad and by observing where it did not putrefy quickly (Ibn Abī Uṣaybi‘a, *Ṭabaqāt*, p. 761). However, the story of him working under the king ‘Aḍud al-Dawla (936-983) may not be accurate as the king was born after al-Rāzī’s death. Most likely, the story refers to a hospital named after the Abbasid caliph al-Mu‘ taḍid (d. 902) (Encyclopaedia of Islam III, “‘Aḍud al-Dawla”; Iskandar, p. 155).

towards the ill and poor, offering them financial aid and nursing care, and was generally “generous, distinguished, and upright with the people.”⁷¹ Al-Rāzī even wrote a book, *Kitāb ilā man lā yaḥḍuruḥu ṭabīb*, also known as *Kitāb ṭibb al-fuqarā’*, to guide people in treating illnesses when a physician was not available.⁷² Al-Rāzī continued practicing medicine in Baghdad before returning to his home town, Rayy, which is also where he died.⁷³

Al-Rāzī certainly could read texts written in several languages. He had access to libraries containing translations of Sanskrit, Pahlavi, and Syriac works. He surely was a native speaker of Persian, and well-versed in Classical Arabic. According to Kahl, it is possible that al-Rāzī was even familiar with Syriac and Greek⁷⁴ – but we cannot know this for sure, given that the Syriac and Greek texts had already been translated into Arabic. Additionally, it is suggested that he was familiar with the Devanāgarī alphabet, if not the Sanskrit language itself, as well as the Chinese writing system.⁷⁵

Al-Rāzī was unequivocally influenced by Galenic medicine, but rather than merely implementing the teachings of Galen, he also gathered his own observations based on his patients and their response to treatment.⁷⁶ His own observations, accompanied by the Arabic translations of works of Galen, Hippocrates, and other authors, are gathered in one of his primary contributions to medicine, *Kitāb al-Hāwī*, ‘The Comprehensive Book’.⁷⁷ His independent, critical mind is demonstrated in his *Kitāb al-ṣukūk wa-l-munāqaḍāt allatī fī kutub Ḡālīnūs*.⁷⁸ In addition to writing medical handbooks, al-Rāzī composed medical texts on

⁷¹ Ibn al-Nadīm, *Fihrist*, p. 702.

⁷² Ibn Abī Uṣaybi’a, *Ṭabaqāt*, p. 778. The title is listed in Sezgin as *K. Man lā yaḥḍuruḥu ṭ-ṭabīb*, (Sezgin, p. 287, no. 21).

⁷³ Sezgin, p. 275.

⁷⁴ Kahl, *Rhazes*, p. 6.

⁷⁵ Kahl, *Rhazes*, p. 6. His book *Kitāb al-Hāwī* in particular includes a great number of Sanskrit, Syriac, and Persian sources. For more, see Kahl, ‘The Sanskrit, Syriac and Persian Sources in the Comprehensive Book of Rhazes’.

⁷⁶ El-Rouayheb & Schmidtke, p. 63. For more on this topic, see ‘Thirty-Three Clinical Observations by Rhazes (circa 900 A.D.)’ by M. Meyerhof in *Isis*, Vol. 23, No. 2 (Sept. 1935), pp. 321-372. According to Ibn Abī Uṣaybi’a, al-Rāzī had a noble friend with whom he used to spend nights reading the works of Hippocrates and Galen (Ibn Abī Uṣaybi’a, *Ṭabaqāt*, p. 764).

⁷⁷ El-Rouayheb & Schmidtke, p. 63. See also Sezgin p. 278.

⁷⁸ Ibn Abī Uṣaybi’a, *Ṭabaqāt*, p. 776. In Sezgin listed as *aṣ-ṣukūk ‘alā Ḡālīnūs* (Sezgin, p. 292, no. 70). For a recent edition and translation into French, see Pauline Koetschet, *Abū Bakr al-Rāzī, «Doutes sur Galien». Introduction, édition et traduction* (coll. Scientia Graeco-Arabica), Berlin, de Gruyter, 2019. Al-Rāzī justified criticising Galen by stating that “It is more in the spirit of Galen to follow his exhortation to search for truth than to swear by his opinions.” (Temkin, p. 118).

specific topics, such as *Kitāb al-Ġadarī wa-l-Ḥaṣba*, ‘On Smallpox and Measles’,⁷⁹ *Kitāb al-Taḡīm wa-l-Taṣḡūr*⁸⁰ and *Kitāb fī l-Qawlanġ*, ‘On Colic’.⁸¹

According to Ibn Abī Uṣaybi‘a, Al-Rāzī studied philosophy under al-Balḥī.⁸² He combined his medical expertise with his philosophical views in *al-Ṭibb al-rūḥānī*, ‘The Spiritual Medicine’, that is his largest surviving philosophical work,⁸³ also written for Manṣūr ibn Ishāq.⁸⁴ Al-Rāzī is also known for his theory of ‘the five eternal’, explaining how the cosmos derives from God, soul, matter, time, and place.⁸⁵ Unlike his well-preserved medical legacy, most of al-Rāzī’s philosophical writings, including the ones explaining the five eternal, are lost, and survive only as fragments in writings by other authors who mostly mention al-Rāzī and his theory with the aim of refuting him;⁸⁶ al-Qāḍī Ṣā‘id claimed that al-Rāzī did not understand theology, and thus possessed foolish, malicious beliefs and criticised people he did not understand.⁸⁷ Consequently, al-Rāzī’s unique views on philosophy differed so vastly from what was generally accepted that no continuing school of thought was established.⁸⁸

To conclude, al-Rāzī was renowned for his knowledge of medicine, alchemy, and philosophy, as well as his studies in physics, mathematics, zoology, and botany. He was a well-respected scholar in the Islamic world, yet his reputation rests mainly on his medical achievements.⁸⁹ He was both a prolific writer of medical works and a dedicated practitioner of clinical medicine.⁹⁰ He was considered the second Galen among his contemporaries, and held undisputed authority in Western medicine until the 17th century.⁹¹

⁷⁹ Sezgin, p. 283, no. 3.

⁸⁰ Ibn Abī Uṣaybi‘a, *Ṭabaqāt*, p. 778; Sezgin, p. 284, no. 5.

⁸¹ Ibn Abī Uṣaybi‘a, *Ṭabaqāt*, p. 787; Sezgin, p. 286, no. 14. Edited and translated into French by Ḥammāmī, 1983.

⁸² Ibn Abī Uṣaybi‘a, *Ṭabaqāt*, p. 763. According to Sezgin (p. 275) the person in question most likely is Abū Zayd al-Balḥī.

⁸³ El-Rouayheb & Schmidtke, p. 64.

⁸⁴ Sezgin, p. 275.

⁸⁵ El-Rouayheb & Schmidtke, p. 63.

⁸⁶ El-Rouayheb & Schmidtke, p. 63.

⁸⁷ Ibn Abī Uṣaybi‘a, *Ṭabaqāt*, p. 763.

⁸⁸ Nasr, p. 145.

⁸⁹ Sezgin, p. 275.

⁹⁰ El-Rouayheb & Schmidtke, p. 63.

⁹¹ Sezgin, p. 275.

The manuscript

MS Escorial

This dissertation is based on the presumably unique copy of al-Rāzī's *Maqāla fī l-Faṣd*, 'On phlebotomy', Ms. Escorial 857 (fol. 1-22).⁹² The treatise is listed by Sezgin under the name *Kitāb fī l-Faṣd*.⁹³ Ms. Escorial 857 is preserved in Real Biblioteca del Monasterio de San Lorenzo de El Escorial in Spain. The manuscript consists of 22 folio pages of Arabic text. The text is divided into 14 chapters that each deal with a different topic related to phlebotomy: blood in general, how and when phlebotomy is used, prescriptions, cupping, etc.⁹⁴ Ms. Escorial 857 in its totality is a collection of 101 folio pages, containing several medical works.⁹⁵ However, in this book I will refer to the chosen manuscript as Ms. Escorial. Sezgin lists four additional treatises on phlebotomy by al-Rāzī: *Teheran, Maḡlis (1538) 1550 (s. Kat. IV, 252)*, that contains another text; and three other manuscripts: *Teheran, Dānišgāh VIII, 596, No. 1987 (91a-97a), 1075 H.*, *eb. X, 1667, No. 2830 (ff. 15-22, 12, Jh. H.)*; *Teheran, Malik (s. Naḡmābādī 145), Haidarabad, Āṣaf. II, 914, ṭibb 243 (79a-85a, 12. Jh. H.)*, that may contain fragments of the text of Ms. Escorial or an alternative treatise. The manuscript known as *Teheran, Maḡlis (1538)* seems to be the source of a short treatise attributed to al-Rāzī, *Maqāla anša 'ahā Muḡammad ibn Zakariyyā' al-Rāzī fī l-Faṣd* uploaded online, hereafter referred to as *Alukah*.⁹⁶ Consulting both *Teheran, Maḡlis 1538* and the online version of *Alukah* resulted in the conclusion that *Teheran, Maḡlis 1538* is a different treatise from Ms. Escorial. As to Ms. Escorial, I have visited Real Biblioteca del Monasterio de San Lorenzo de El Escorial in November 2022 and consulted the physical copy of the manuscript. Ultraviolet

⁹² Derenbourg & Renaud, p. 65. Sezgin (p. 287) dates the manuscript to 1279.

⁹³ Sezgin, p. 287. By Ibn Abī Uṣaybi'a listed as *Kitāb fī šaraf al-faṣd 'ind al-istifrāḡāt al-imtilā'iyā* [...], that al-Rāzī wrote for the emir Abū 'Alī Aḡmad ibn Ismā'īl ibn Aḡmad (Ibn Abī Uṣaybi'a, *Ṭabaqāt*, p. 789) – i.e., Aḡmad II, ruler of the Samanid dynasty between 295/907 to 301/914 (Ibn Abī Uṣaybi'a, *LHM*, p. 872, footnote 140).

⁹⁴ Derenbourg & Renaud, p. 65.

⁹⁵ Derenbourg & Renaud, p. 67.

⁹⁶ Alukah.net offers an edited version of a short treatise on phlebotomy attributed to al-Rāzī, *Maqāla anša 'ahā Muḡammad ibn Zakariyyā' al-Rāzī fī l-Faṣd*. It is a different treatise that focuses on the method and benefit of cutting each vein, a topic also discussed in chapters 5 and 6 in Ms.

Escorial. <https://www.alukah.net/culture/0/5123/> - مقالة-أنشأها-محمد-بن-زكريا-الرازي-في-22%الفصد22%
22%الفصد22%/

technology was used in order to check the erased and corrupt parts of the text. Unfortunately, in the parts in which text has been intentionally erased, the paper has been nearly thoroughly destroyed, consequently leaving no traces of whatever had been stated in the manuscript initially.

The physical appearance of Ms. Escorial

Each page, apart from the last page on which the treatise ends, contains 23 lines of text, and additional notes and corrections are at times added in the margins. The dimensions are 138 x 214 mm. The text is Maghrebi, “Écriture mağribine”⁹⁷, and the text size average. The paper has a lighter shade of brown, and the ink used to write the text is either dark brown or black that has faded to varying shades of brown. There are reddish-orange lines above some words in the text. A new chapter is marked with slightly bigger and thicker font in the manuscript, with a reddish-orange line above. Likewise, some catchwords are written in a bolder, darker script. The manuscript contains no illuminations. For a thorough review of the additional signs in the manuscript, see *Principles of edition* below.

As to the date of Ms. Escorial, Sezgin dates it to 1279.⁹⁸ As Derenbourg & Renaud note, the date of *Maqāla fī l-Faṣd* (857/1) is erased, while four other manuscripts in the same volume (857/2-5), according to them, may date from the 12th or 13th century.⁹⁹ The last manuscript in the same volume (857/6) is dated to 907/1501-2.¹⁰⁰

Ms. Parma

The anonymous Hebrew translation, *Ma'amar baHaqqazah le'al-Rāzī*, ‘A Treatise on Phlebotomy for al-Rāzī’, is preserved in Ms. Parma, Biblioteca Palatina 2283, cat. Richler 1535, fols. 91-97r.¹⁰¹ The treatise is seven folio pages long, and each page contains 30 lines of text. The paper is light brown and the text is dark brown. The medical miscellany in which the translation can be found is copied in the late 15th century, using a Sephardic, semi-cursive script.¹⁰² The paper is 150 x 214 mm.¹⁰³ The manuscript contains no illuminations. There is a high-quality digitised copy of Ms. Parma 2283 in the Online Catalogue of Microfilmed Manuscripts of the National Library of Israel,¹⁰⁴ that was used to study the manuscript. Despite the

⁹⁷ Derenbourg & Renaud, p. 67.

⁹⁸ Sezgin, p. 287.

⁹⁹ Derenbourg & Renaud, pp. 65-66.

¹⁰⁰ Derenbourg & Renaud, p. 67.

¹⁰¹ Richler, p. 451.

¹⁰² Richler, p. 451.

¹⁰³ Richler, p. 451.

¹⁰⁴ [https://www.nli.org.il/he/manuscripts/NNL_ALEPH000080095/NLI#\\$FL14864812](https://www.nli.org.il/he/manuscripts/NNL_ALEPH000080095/NLI#$FL14864812)

fact that the medical miscellany contains several works, I will refer to the chosen manuscript as Ms. Parma. While Ms. Parma, as the only known translation of al-Rāzī's *Maqāla fī l-Faṣd* into any language, serves as an important source to confirm my reading of Ms. Escorial, the complete edition, translation and commentary of it is left for a future publication.

Authenticity

It is evident that *Maqāla fī l-Faṣd* is attributed to al-Rāzī, as becomes clear both in the preface of Ms. Escorial and Ms. Parma, as well as in the catalogues by Sezgin,¹⁰⁵ Derenbourg & Renaud,¹⁰⁶ and Richler,¹⁰⁷ in which the treatises are listed. Moreover, the fact that the *Teheran, Maḡlis* manuscript, together with the online version of *Alukah*, contains information that corresponds to chapters 5 and 6 in Ms. Escorial supports its authenticity. Furthermore, the content in Ms. Escorial indicates that its author lived one generation after some events described in anecdotal stories.¹⁰⁸ These accounts further strengthen the alignment between the narratives and the chronological context of al-Rāzī's lifetime.

I have also checked other treatises on phlebotomy, also listed under the name *Maqāla fī l-Faṣd*: an anonymous treatise;¹⁰⁹ *Maqāla fī l-Faṣd* by Ibn al-Tilmīd;¹¹⁰ and *Maqāla fī l-Faṣd*, or *al-Maqāla al-Amīniyya fī Faṣd al-'Urūq*, by Ibn al-Tilmīd.¹¹¹ They all comprise ten chapters. Having conducted a preliminary investigation and review of the content of the three manuscripts in question, it is evident that they are not related to Ms. Escorial.

Principles of edition

This edition is based on the presumably unique text witness of al-Rāzī's *Maqāla fī l-Faṣd*. I have studied a digitised copy of the manuscript and consulted the original manuscript in Real Biblioteca del Monasterio de San Lorenzo de El Escorial in Spain. To enhance readability, I have taken several editorial decisions, such as dividing the text into paragraphs, adding punctuation, and standardising spelling –

¹⁰⁵ Sezgin, p. 287.

¹⁰⁶ Derenbourg & Renaud, p. 65.

¹⁰⁷ Richler, p. 451.

¹⁰⁸ See chapter 2, paragraph 26 for a reference to an Abbasid vizier who lived a generation prior to al-Rāzī's time, and chapter 9, paragraph 8 where al-Rāzī recounts a story told by his teacher, involving the phlebotomy of the Caliph al-Ma'mūn.

¹⁰⁹ An anonymous treatise on phlebotomy, *Maqāla fī l-Faṣd*, Ms. Istanbul, Beyazıt (Umumi) 4161 (2. Teil), fol. 1r-9r.

¹¹⁰ *Maqāla fī l-Faṣd*, Amīn al-Dawla Ibn al-Tilmīd, edited and translated into French by Subḥī Maḡmūd Ḥammāmī, 1997.

¹¹¹ According to Qatar Digital Library this manuscript is ascribed to Ibn Sīnā, yet already the name and information on the first pages reveal its relation to Ibn al-Tilmīd.

especially concerning diacritical points and *hamza*. Below I will discuss the applied measures in detail. Additionally, a text-critical apparatus has been included in order to preserve all the necessary information found in Ms. Escorial, including marginal notes and other annotations, as well as to inform the reader about any operations that I have made during the editing process, such as emendations.

Chapter division: In Ms. Escorial, the text is divided into fourteen chapters. The chapters are listed at the beginning of the manuscript after the preface. This edition retains the original format of Ms. Escorial, but includes captions to clearly indicate the different parts of the manuscript, such as the preface, table of contents, and new chapters. This has been done without altering the essence of the original document.

Paragraphs: I have divided the text into paragraphs for two main reasons. Firstly, to improve readability by providing clear, thematic divisions that make it easier for the reader to follow the text. Some paragraphs are short while others are longer. Secondly, to facilitate referencing to specific parts of the text¹¹² by using a system where the first number indicates the chapter and the second indicates the paragraph, e.g., §1:2 means chapter 1, paragraph 2. This system has been applied consistently in both the Arabic edition and the English translation.

Folio numbering: The folio pages in Ms. Escorial are marked with Latin numbers in the upper left corner of the recto page (left-sided page of the folio). Only in the case of 12 verso, the verso page is marked. These markings were added later by using a pencil. The folios are numbered so that each verso (e.g., 2b) starts a new folio, followed by a recto page (e.g., 3a). In this edition, the same numbering system as used in Ms. Escorial is maintained.

Margins: The margins of Ms. Escorial contain notes, corrections, completions of words and sentences, clarifications of smudged text, as well as notes made by the copyist. In this edition, relevant marginal notes are included and marked with ◊ and a footnote and comment in the critical apparatus, e.g., <[text]> in the margin. In order to provide an edition as close to the original as possible, irrelevant notes made by the copyist are also marked in the apparatus but not included in the edition. An example of a relevant marginal note can be found in §6:25, where the word *waġa* ‘, ‘pain’ is added in the margin to complete the sentence: “what reduces the <pain of> phlebotomy”, since the marginal note in this case is understood vital to convey the message. Irrelevant marginal notes, such as comments by the copyist, have been marked but not included in the edition. Irrelevant marginal notes can be found in the critical apparatus, marked with <[text in the margin]>. An example of this can be found in §2:20, where the copyist, apart from

¹¹² This method is used and supported by, e.g., Samir Khalil Samir, see *Actes du premier Congrès*, p. 82.

suggesting how to complete the sentence, has written a comment that is deemed irrelevant for the edition. If a word occurs twice due to completion in the margin, it is marked with both <[text in the margin]> and MS + [word], such as in the case of §11:6. Ms. Escorial uses ‘*atfa*,¹¹³ a symbol drawn above a word, to indicate the location of a marginal note. The marginal notes also contain abbreviations such as صح (correct),¹¹⁴ بيان صح (correct explanation),¹¹⁵ and أصل (the body of the text).¹¹⁶ In one instance in Ms. Escorial, a variant reading is offered by marking with a خ above a word,¹¹⁷ as can be seen in §2:3.

Diacritical points: Diacritical points, used for differentiating the letters that have similar bodies,¹¹⁸ occur throughout Ms. Escorial. Most diacritical points are in their correct places, but sometimes they are misplaced. In this edition, most of these errors have been neglected in the critical apparatus in order to avoid an excessive number of unimportant notes. The most common occurrence is *hā*’ instead of *tā*’ *marbūṭa*. The letters *fā*’ and *qāf* are differentiated by the former being written with one point below the body, and the latter with one point above the body. A curiosity, not related to diacritical points, is that a final *kāf* sometimes takes the form of a medial *kāf*, and at times the form of a *ṭā*’.

Vowel signs and *muhmal*¹¹⁹ signs: In Ms. Escorial, the use of vowel signs and *muhmal* signs is inconsistent. While the text is mostly vocalised, the vowel signs may sometimes lead to less plausible readings. *Muhmal* signs, intended to ensure the correct reading and differentiation of the non-dotted from the dotted letters of the same form,¹²⁰ occur despite the text being written with diacritical points. *Muhmal* signs do not occur coherently, but are found below the letters *hā*’, *ṣād*, and ‘*ayn* – below *hā*’ as a small *hā*’, below *ṣād* as a small *ṣād*, and below ‘*ayn* as a small ‘*ayn*. *Tanwīn* can be found in nominative, accusative, and genitive cases, sometimes fully spelled even when the word is written in the definite form. *Sukūn* occurs occasionally.

Emendations and additions: In the case of emendation in the text, the preferred reading appears first in the critical apparatus, followed by a colon, after which the original word in Ms. Escorial is reproduced, for example: تغيير: زخير. Signs and words omitted from the edition are marked with a + symbol in the critical apparatus. For example, a circle with point, marked as +o, represents a sign

¹¹³ Gacek, *Taxonomy*, p. 221.

¹¹⁴ “when used for an omission/insertion or evident correction” (Gacek, *Taxonomy*, p. 218).

¹¹⁵ *Bayān*, or sometimes the letter *nūn* alone, stands for ‘explanation’ (Gacek, *Taxonomy*, p. 218).

¹¹⁶ Gacek, *Taxonomy*, p. 218.

¹¹⁷ *nushā*, i.e., another copy (Gacek, *Taxonomy*, p. 222).

¹¹⁸ GAP II, p. 41.

¹¹⁹ For more on *muhmal*-signs, see Grohmann, *Arabische Paläographie*, II. Teil, p. 42-46 (Differenten).

¹²⁰ GAP II, p. 42.

excluded from the edition. In some instances, a word has been added into the edition, even if it significantly alters the meaning of the sentence, as in §2:38, where the word ‘not’ was added to the sentence: “the humours in the body are [not] balanced”. If the reading of a word in Ms. Escorial is uncertain, it is noted in the critical apparatus.

The spelling of *hamza*: In Ms. Escorial, the spelling of *hamza* (a sign used to represent a glottal stop) varies and is often inconsistent. It is sometimes written, mostly in the case of an initial *alif*, and other times only the *kursī* on which the *hamza* should be written according to the orthography today is used. *Hamza* with *alif* in the initial position occurs either above or below the *alif* (ʾ or ِ), but often only ِ is used; *hamza* on *yā* (ى) is at times replaced by ي, e.g., دلائل instead of دلائل; and *hamza* on *waw* (و) is simply و, e.g., هولاء instead of هؤلء. The *hamza* independently on the line is sometimes replaced by a و, such as in the word جزو for جزء. The scribe has at times replaced *hamza* followed by a long *alif* in the middle of a word with an *alif* with a *mādda* above, e.g., دماهم for دماهم (genitive case). At the end of a word, *hamza* is sometimes replaced with a *mādda*, e.g., ابنا for أبناء, or with a *fatha*, eg. امتلاء for امتلاء. Sometimes simply an *alif mamdūda*, e.g., استرخا for استرخاء is used. To include the misspelling of every *hamza* in the critical apparatus was judged to be unnecessary, and I have chosen to use the spelling that nowadays is considered standard.

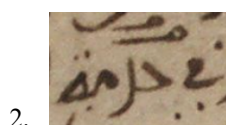
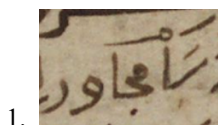
On one occasion, the scribe has spelled a word with a doubled *lām* instead of a *šadda* on one *lām*, which due to occurring only once cannot be called a trend, but rather a mistake: ألقناه for ألقناه, ‘we have composed it’. Throughout the manuscript, Allah is spelled combining the initial *alif* with the *lām*, so that the word looks like للله. In this edition, I have used الله as a standard spelling.

In one instance the scribe has replaced *alif maqṣūra* with *alif mamdūda*, يلقا for يلقى. As for non-Arabic words, they too have various spellings at different times, and the variant spellings, when proven to be authentic, are preserved in this edition. The vowelling of especially non-Arabic or Arabicised terms may vary, such as *sikanḡubīn*, *sakanḡabīn*, or *sakanḡubīn*. Variant spellings regarding consonants occur especially in the case of س or ص: both قراسيا *qarāsiyā* and قراصيا *qarāsiyā* are attested forms for the Greek κεράσια; and likewise, the terms باصور *bāsūr* and باصور *bāṣūr* for haemorrhoid.

Punctuation: The Arabic text does not contain any punctuation marks, which is not surprising, as using punctuation marks in written Arabic is a modern invention.¹²¹ To make the text more readable, I have added punctuation to clearly separate sentences and to break up longer sentences. I have used my discretion in adding punctuation to ensure clear and easy reading. As for additional signs in the text, Ms. Escorial also contains reddish-orange lines above certain words, but as their purpose is unclear, they are neither included in the edition nor the critical apparatus. At times they seem to serve as markers for catchwords or as if marking the beginning of a sentence, but this theory does not hold throughout the text. Additionally, a circle with a dot inside, \odot , occurs in the text.¹²² The occurrence of this sign is somewhat arbitrary, as it appears, for example, after a proper noun, as if implying that a quote is coming; at the end of a sentence; at the end of a passage; at the end of a quote; in the middle of a list of ailments and diseases; at the end of naming a new chapter, or even after a preposition in the middle of a sentence. Circle with a dot inside is marked in the critical apparatus as +o.

Plural forms: The text sometimes uses masculine plural forms for nouns that traditionally are feminine singular, such as عروق دقاق *urūq diqāq* instead of عروق دقيقة *urūq daqīqa*. I have chosen not to change this unless it negatively impacts the interpretation of the text. Additionally, the verbs referring to certain nouns at times appear in the opposite gender, i.e., conjugated in feminine form for a masculine noun, or vice versa.

In the event something has been deleted by the scribe from Ms. Escorial, it is indicated in two ways: 1. a slanted line followed by another line with a small circle at one end (e.g., §6:30); 2. two horizontal lines with a small circle at one end (e.g., §2:14). In some instances, these symbols occur four times above a word that is corrected in the margin.¹²³



¹²¹ Earlier manuscript tradition demonstrates the use of different types of signs: a certain set of signs to indicate pauses in the recitation of the Qur'ān, while in Arabic manuscript tradition other signs were used in order to highlight parts of the text. For more on the history of modern punctuation in Arabic, see Rezaei, *Punctuation*.

¹²² For more on punctuation marks, see e.g., Abbott, *Studies in Arabic Literary Papyri II*, pp. 87f., and Gacek, *Taxonomy of scribal errors and corrections in Arabic manuscripts*, p. 220f.

¹²³ These corrections signs, among several other *signes-de-renvoi*, are described in Gacek (2009), 'Arabic Manuscripts: A Vademecum for Readers', p. 250.

Occasionally, these symbols appear in the text in places where deletion of a word is not deemed necessary. In such instances, the reader is informed in the critical apparatus.

Weights and measures: This edition does not provide translations for the weights and measures that occur in Ms. Escorial, nor does it suggest equivalents in modern units, as they were not standardised and cannot be determined with certainty.¹²⁴ A short background and summary of weights and measures can be found at the end of this work.

Daggers (†) are used to mark erased parts of Ms. Escorial, as well as corrupt or unintelligible words in the text.

Remarks on translation and commentary

My attempt has been to produce a readable English translation that accurately conveys the knowledge from the original Arabic text while staying true to its meaning. Some modifications to the syntax were necessary for improved readability. Any additions I have made as an editor to clarify the text or to make it flow better are indicated in square brackets []. To maintain coherence, I have tried to translate technical terms into a single English equivalent, even if the Arabic text may contain different terms for the same concept.¹²⁵

In the commentary, I have aimed to provide the reader with additional information on the theoretical background, verify quoted sources, and highlight the strong influence of the Greek medical tradition. I also consider it crucial to discuss terminology, offer alternative interpretations of the text, and recommend further reading on certain subjects. I have primarily used English translations of the Greek works, and editions of Arabic works by al-Rāzī and Qusṭā ibn Lūqā, as well as a few Arabic translations of the Greek works. Additionally, Ms. Parma has served as a valuable resource for clarifying some challenging passages in Ms. Escorial, and I have noted this in the commentary for the reader's benefit.

In addition to the Arabic edition with an English translation and commentary, this work includes several indices that cover weights and measures, instruments and utensils, places, personal names, works cited in Ms. Escorial, pharmaceutical forms, terms used in preparations of drugs, prescriptions, *materia medica*, and central medical terminology.

¹²⁴ Hinz, p. 1.

¹²⁵ An exception here is the Arabic term موضع *mawḍiʿ*, that is used for 'site' or 'spot', translated accordingly depending on the context and the size of the location in question. While there are other possible translations for the Arabic term, these two are deemed the most suitable ones to be used in a medical context.

The content

The volume in which Ms. Escorial is extant begins with two pages of irrelevant Arabic text written in a different hand on folios 1a and 1b, reaching page 2a for one and a half lines. The text then reads: “A book in which a treatise by the wise, skilled Abū Bakr Muḥammad ibn Zakariyyā’ al-Rāzī”, followed by a smudged word and three Arabic signs, believed to be *hy*, *hā*’, and *‘ayn*.¹²⁶ The manuscript then contains eight lines of text in Latin: “*Mahamedis Abem Zacharia de chirurgia liber integer cum alijs insertis ad eum Galeni videlicet comentum super Io aphorismorum ejusdem tractatus primus de morbis acutis Hypocratis de morbis nationum*”.¹²⁷ The Latin text is followed by six lines of text in Spanish, containing the same information.

Maqāla fī l-Faṣd begins on page 2b.

It is probable that al-Rāzī has used Galen’s Book *Galenī de Curandi Ratione per Venae Sectionem*, ‘On Treatment by Venesection’¹²⁸ as a source. It is possible that he had access to Qusṭā ibn Lūqā’s *Kitāb fī l-Faṣd*, which includes a preface where Qusṭā declares having composed a book that compiles Galen’s teachings on treatment by phlebotomy.¹²⁹ Moreover, as can be observed throughout Ms. Escorial, it is evident that al-Rāzī had read a lot of works by other Greek authors.¹³⁰

¹²⁶ For what these may denote, see Gacek, *Taxonomy*, p. 218, 231.

¹²⁷ I want to thank to Dr. Arsenij Vetushko-Kalevich for his help with the Latin text.

¹²⁸ Brain, p. 67ff.

¹²⁹ Qusṭā ibn Lūqā, *Kitāb fī l-Faṣd*, pp. 286-287.

¹³⁰ On the course of working on this edition, I have utilised Galen’s Book ‘On Treatment by Venesection’, *Galenī de Curandi Ratione per Venae Sectionem*, as a source of information. Additionally, Qusṭā ibn Lūqā’s *Kitāb fī l-Faṣd* has been beneficial in providing insight into the Arabic terminology and for verifying the reading.

Survey of the book and summaries of the fourteen chapters

Maqāla fī l-Faşd consists of the following parts:

Preface

Table of contents

Chapter 1. Benefits of blood in a human, its generation, and how it flows until it becomes real nutriment.

Chapter 2. Circumstances that shall be considered by whoever is determined to perform phlebotomy.

Chapter 3. On the causes that make phlebotomy necessary.

Chapter 4. Quantity of blood that is extracted.

Chapter 5. Phlebotomised veins.

Chapter 6. Method of phlebotomy and the mistake that may occur in order to beware of it.

Chapter 7. Drawing matter.

Chapter 8. Times that are appropriate for extracting blood, and on being careful in its extraction.

Chapter 9. Epaphairesis.

Chapter 10. The food, drink, and regimen of the phlebotomised person.

Chapter 11. Drugs and foods that extinguish the combustion of blood.

Chapter 12. Benefit of phlebotomy and the indications of the illnesses for which phlebotomy is conducted.

Chapter 13. Treating the mistakes that may happen during phlebotomy.

Chapter 14. Cupping.

Preface: Abū Bakr Muḥammad ibn Zakariyyā' al-Rāzī states that he was in the presence of a praiseworthy scholar¹³¹, wrote down what was said, and promised to compose a treatise on phlebotomy. Al-Rāzī mentions that after the meeting was adjourned, this praiseworthy man came to him, insisting that he would complete the statement about phlebotomy. Thus, al-Rāzī did as he had promised, and composed a treatise by using a method unattained by his predecessors – whatever this method may be is not mentioned. At times al-Rāzī, being the author of the treatise, refers to himself in the singular, at times in the plural, throughout the manuscript.¹³²

Table of contents: The treatise is divided into fourteen chapters. These chapters, numbered 1-14, are summarised in the table of contents, and repeated at the beginning of each chapter, in some cases with slightly different words.

Chapter 1: On the benefits of blood in man, its generation, and how it flows in the parts until it becomes proper nutriment. Al-Rāzī goes through fundamental medical theory and anatomy, explaining the production of blood and how it travels through the parts to become nutriment. Al-Rāzī refers to Hippocrates, introducing the three kinds of nutriment: *nutriment*, i.e., blood, *quasi-nutriment*, i.e., blood affected by an ailment of some sort, thus not nourishing, and *destined nutriment*, i.e., food in the stomach, that is destined to become proper nutriment unless any spoilage or purgation occurs. Medical authorities mentioned in this chapter are Galen, Hippocrates, and Aristotle, although most probably Aristotle is not intended, but Erasistratus.

Chapter 2: On the circumstances that shall be considered by whoever is determined to perform phlebotomy. Before conducting phlebotomy, a number of circumstances have to be considered: strength, age, occupation, custom, disposition, season, country, food and drink, and the relation of the humours in the body. Al-Rāzī gives case histories, mentioning the names of Abdullah al-Rāzī and Muḥammad ibn 'Abd al-Malik al-Zayyāt. Al-Rāzī also gives a lot of thought to the influence of the geographical location on phlebotomy, and mentions which foods and drinks one should eat either before or after being phlebotomised, or instead of it. Medical authorities mentioned in this chapter are Galen, Hippocrates, and Qusṭā ibn Lūqā.

Chapter 3: On the causes that make phlebotomy necessary. Al-Rāzī focuses on plethos, i.e., overfilling, and explains that there are two kinds: overfilling relating to the vessels (plethos by filling), and overfilling affecting the strength (dynamic plethos). He explains how the two kinds differ from one another, and how one can distinguish them to offer the patient the right treatment. Al-Rāzī summarises the topic by mentioning that in general one can use phlebotomy or purgation for all

¹³¹ For further details, see the previously indicated note 93.

¹³² For the structure and development of Arabic preface tradition, see Freimark, *Vorwort*.

the illnesses that are caused by blood or the other humours. Medical authorities mentioned in this chapter are Hippocrates and Rufus of Ephesus, although a lot of the content is identical with Galen's words.

Chapter 4: On the quantity of blood that is extracted. Al-Rāzī begins with mentioning that knowing the quantity of blood that one should extract is difficult, but makes it clear that there is no determined limit how little or how much blood should be extracted. This depends on the situation, and this topic is briefly discussed in the chapter. If one phlebotomises for overfilling, one should phlebotomise until the patient becomes unconscious. If, on the other hand, one phlebotomises for the combustion of blood, one should phlebotomise until the colour or the consistency of blood changes. No medical authority is mentioned by name in this chapter, although the content is identical with Galen's words.

Chapter 5: On the phlebotomised veins. There are two kinds of phlebotomised veins: pulsatile veins, i.e., the arteries, that originate in the heart, and non-pulsatile veins, i.e., vessels, that originate in the liver. Al-Rāzī mentions 42 veins in the body that can be phlebotomised, notes where they are located, and lists the benefit of phlebotomising each vein or artery. These veins are at times mentioned by the name, at times simply by where they are located. At the end of the chapter, he also mentions Guinea worms – also called *'irq*, pl. *'urūq*, 'veins' – being aware of them being outside the intention of this work. Medical authorities mentioned in this chapter are Galen and Hippocrates.

Chapter 6: On the method of phlebotomy, and the mistakes that may occur in order to beware of it. Al-Rāzī discusses the differences between veins and arteries, and how the physician should cut them in order to avoid a mistake. He also deals with the matter of phlebotomising a vein that does not become visible, and what reduces the pain of phlebotomy. He also goes through many veins listed in chapter 5, and mentions specifically how each vein is cut properly. Of the medical authorities, Galen is mentioned in this chapter.

Chapter 7: On drawing matters. Al-Rāzī mentions that many physicians have differing opinions on how drawing matters should be conducted, and thus, this chapter should offer some assistance. He states that the phlebotomised sites need to vary depending on the duration of the illness, since in the beginning they are still flowing, while after a number of days they already will have reached the affected side. Al-Rāzī also mentions that phlebotomising from the contrasting side includes two things: deflection away from the affected site, and adapting the matter and preventing its flow. He offers some examples on how this is done in different parts. Medical authorities mentioned in this chapter are Galen and Hippocrates.

Chapter 8: On the times that are suitable for extracting blood, and on being careful in its extraction. Based on Hippocrates, the most suitable time for phlebotomy is the spring. The disposition and regimen of the patient have to be

taken into account. Al-Rāzī gives examples on cases when one needs to be cautious with phlebotomy, and when, on the other hand, the patient most certainly will benefit from phlebotomy. He states that one may phlebotomise a patient at any stage of the illness, given that the strength of the patient allows that. Medical authorities mentioned in this chapter are Galen and Hippocrates.

Chapter 9: On epaphairesis. Epaphairesis, i.e., repeated removal of blood, is conducted when more blood than would be safe to be extracted in one session has to be extracted. This way the patient may rest, eat, and gain strength between the sessions. Another benefit of epaphairesis is that Nature distinguishes the bad blood from the other parts, and dispatches it towards the phlebotomised site due to the weakness caused by the wound. Epaphairesis, depending on why phlebotomy is conducted, may take place either on the same day of the first session, or during the following days. The instructions on how this is done are mentioned. No medical authority is mentioned in this chapter, yet the content is very similar to Galen and Hippocrates.

Chapter 10: On the food, drink, and regimen of the phlebotomised. Al-Rāzī begins by briefly describing the optimal surroundings for conducting phlebotomy, and mentions what should be eaten and drunk before and after phlebotomy. He also mentions that the intake of food should always be moderate. He proceeds to explain what causes unconsciousness during phlebotomy, and what one can do to treat such a patient. The chapter includes an abundant number of foods and drinks, as well as the prescriptions of melicratum and two types of *mayba*. No medical authority is mentioned in this chapter.

Chapter 11: On the drugs and foods that extinguish the combustion of blood. At times a patient cannot be treated with phlebotomy. This may be due to his disposition, strength, custom, regimen, or a pre-existing illness or condition. Thus, this chapter contains an abundant list of drugs and foods that substitute phlebotomy. Al-Rāzī gives six prescriptions of decoctions and pastilles that either have a purgative effect or extinguish the combustion of blood. Of the medical authorities, Galen, with his case history of a sixty-year-old patient with a swollen tongue, is mentioned in this chapter.

Chapter 12: On the benefit of phlebotomy and the indication of illnesses that are treated with phlebotomy. Al-Rāzī begins by saying that it is time to look at why each vein is frequently used in phlebotomy. Thus, he begins from the frontal vein, continues to the cephalic vein, basilic vein, median cubital vein, *vena salvatella*, the veins in the popliteal fossa, the saphenous vein, and the sciatic vein, offering an extensive list of illnesses and their indications that can be cured by phlebotomy. Of the medical authorities, Galen is mentioned in this chapter.

Chapter 13: On the mistake that occurs during phlebotomy. A mistake may occur when conducting phlebotomy, and thus, in this chapter, al-Rāzī gives seven prescriptions of dressings that cause the flow of blood from the wound to cease.

Four of the listed prescriptions are used for stanching the flow of blood from an artery, and the other three prescriptions are for treating a swelling that is generated in the muscle, nerve, and flesh, or if the physician fears that the matters would flow towards the swelling. Of the medical authorities, Galen is mentioned in this chapter.

Chapter 14: On cupping. Cupping is carried out in two manners, with scarification or without scarification. The sites that usually are treated by one of these two are listed, accompanied by the ailments that are cured by using one of the two methods. Al-Rāzī also instructs how cupping is done, the material of the cupping glasses, and what one has to take into account before conducting cupping. The chapter ends with words that the treatise on phlebotomy is complete. No medical authority is mentioned in this chapter.

Edition and translation

2a| كتاب فيه مقالة الحكيم الماهر أبي بكر محمد بن زكرياء الرازي .

|2a| A book in which a treatise by the wise, skilled Abū Bakr Muḥammad ibn Zakariyyā' al-Rāzī.

- ١ : ٥ |2b| بسم الله الرحمن الرحيم¹
- ٢ : ٥ قال أبو بكر محمد بن زكرياء الرازي قد كان جرى بحضرة رجل فاضل يحب العلم ويكرم أهله ذكر الفصد ومنافعه وقوانين استعماله ووجوه العلاج به .
- ٣ : ٥ وأُمليتُ في مجلسه ما حضرني حفظه مما يحتاج إليه ولا غنى له عن الفصد .
- ٤ : ٥ ووعدته أن أكون أولف مقالة في الفصد يكثر غناؤها للناظرين فيها يغمر نفعها كل من قرأها وعمل بما فيها .
- ٥ : ٥ فلما انفصل هذا الرجل الفاضل من سفره ولم يترك مُلازماً لي يرغب إليّ ويُلح عليّ فيما كنت وعدت من إتمام القول في الفصد .
- ٦ : ٥ فتقدمتُ إلى ذلك بقلب مخلص وسلكت في تأليفها مسلكا لم يبلغه من كان قبلنا .
- ٧ : ٥ ونسأل الله واهب العقل أن يعصمنا من الزلل فيما تكلفناه وأن يرشدنا إلى سبيل النجاح فيما ألفناه² وبالله التوفيق .

¹ Text erased in Ms. Escorial, see commentary.

² ألفناه : اللغناه

0:1 |2b| In the name of God, the Merciful, the Compassionate †.....†

0:2 Abū Bakr Muḥammad ibn Zakariyyā' al-Rāzī said: It was in the presence of a praiseworthy man who loves science and honours its scholars that phlebotomy, its benefits, the rules of using it, and the various ways of treatment with it were mentioned.

0:3 In his council, I was made to write down what he had prepared for me, what he memorised regarding what is needed, and what one cannot do without in regard of phlebotomy.

0:4 And I promised him that I would compose a treatise on phlebotomy, abundant in richness for those who study it, and highly beneficial for everyone who reads it and works with it.

0:5 And when this praiseworthy man left his dining tables and did not leave me any company, he requested me and insisted on me as I had promised to complete the treatise on phlebotomy.

0:6 Thus I approached it with a sincere heart, and while composing it, I followed a method unattained by our predecessors.

0:7 And we ask God, the giver of intellect, to protect us from making mistakes in what we took upon ourselves, and to guide us to the path of success regarding what we have composed – may God grant us success!

أبواب المقالة

- ٨: ٠ وقد قسمنا هذه المقالة على أربعة عشر باباً.
- ٩: ٠ الباب الأول في منفعة الدم في الإنسان وتولده وكيف يصير حتى يكون غذاءً بالحقيقة.
- ١٠: ٠ الباب الثاني نذكر فيه الأحوال التي يحتاج أن ينظر فيها من كان عازماً على الفصد.
- ١١: ٠ الباب الثالث في الأشياء الموجبة للفصد.
- ١٢: ٠ الباب الرابع في كمية ما يخرج من الدم.
- ١٣: ٠ الباب الخامس في ³ العروق المفصودة.
- ١٤: ٠ الباب السادس في كيفية فصد العروق وما يلحق ذلك من الخطأ ليحترس منه.
- ١٥: ٠ الباب السابع في جذب المادة.
- ١٦: ٠ الباب الثامن في الأوقات التي يصلح فيها خروج الدم والاحتراس من خروجه.
- ١٧: ٠ الباب التاسع في التثنية.
- ١٨: ٠ الباب العاشر في غذاء المفصود وشرابه وتدبيره.
- ١٩: ٠ الباب الحادي عشر في الأدوية والأغذية المطفئة للدم.
- ٢٠: ٠ الباب الثاني عشر في منفعة فصد العروق |3a| وعلامة العلل التي يُفصد لها.
- ٢١: ٠ الباب الثالث عشر في علاج الخطأ الواقع في الفصد.
- ٢٢: ٠ الباب الرابع عشر في الحجامة.

Chapters of the treatise

0:8 We have divided this treatise into fourteen chapters.

0:9 The first chapter on the benefits of blood in man, its generation, and how it flows until it becomes proper nutriment.

0:10 The second chapter on the circumstances that should be considered by whoever is determined to perform phlebotomy.

0:11 The third chapter on the causes that make phlebotomy necessary.

0:12 The fourth chapter on the quantity of blood that is extracted.

0:13 The fifth chapter on the phlebotomised veins.

0:14 The sixth chapter on the method of phlebotomy and the mistakes that may occur, in order to beware of it.

0:15 The seventh chapter on drawing matter.

0:16 The eighth chapter on the times that are appropriate for extracting blood, and on being careful in its extraction.

0:17 The ninth chapter on epaphairesis.

0:18 The tenth chapter on the food, the drink, and the regimen of the phlebotomised person.

0:19 The eleventh chapter on the drugs and foods that extinguish [the combustion of] blood.

0:20 The twelfth chapter on the benefit of phlebotomy [3a] and the indications of the illnesses for which phlebotomy is conducted.

0:21 The thirteenth chapter on treating the mistake that occurs during phlebotomy.

0:22 The fourteenth chapter on cupping.

الباب الأول

١ : ١ البــــــــاب الأول في منفعة الدم في الإنسان وتولده وكيف يصير في الأعضاء حتى يصير غذاء بالحقيقة .

١ : ٢ قال أبو بكر محمد بن زكرياء الرازي⁴ إنه لما كان الدم أعدل الأخلاط وكان أئذها وأولها بالتقديم على أكثر الأخلاط للحاجة إلى ذلك إذ هو الحار الغريزي الذي هو قوام الحياة بمنزلة الحطب للنار أو بمنزلة الدهن للسراج وبه يخصب البدن ويصح وتذهب الهموم ويمتنع من الأمراض السلية والذبولية وتصح الكبد التي بصحتها نصح كما قال جالينوس: إن نحيا حياةً طيبةً فبصحة كبودنا . وقد أمرنا بالتدرج في زيادة الغذاء ما لم يقع سرف وإفساد هضم ولا زيادة تمنع البدن من الحركة وتنقله عن فعله الطبيعي إيثاراً منه لاجتلاب الدم الذي هو ضد الشيخوخة⁵ التي هي الفناء بعينه .

١ : ٣ وقد حكى جالينوس عن أراسطراطس⁶ أنه كان يمنع من الفصد شحا منه على الدم وكان يرى بالامتناع من الغذاء وتقليله عوضاً من الفصد .

١ : ٤ وهذا كان يمكنه لو لم يفجأه من سورة الدم ما لا يبقى العليل معه إلى أن يقلل غذاءه .

١ : ٥ والدم أيضاً مادة الغذاء الحقيقي الذي ذكره أبقراط حين قال إن الغذاء يكون على ثلاثة أوجه أحقها وأولها أن يكون غذاء ما تشبه بالمغتذي واغتذت به الأعضاء من العروق التي يخرج إليها يشبه البخار وهو العوض مما يتحلل دائماً⁷ .

١ : ٦ والثاني شبه الغذاء وهو الدم الكائن في العروق ولأن هذا الدم قد يقع به آفة من انتفاخ عروق في⁸ أي موضع كان من البدن أو غير ذلك من سقطه أو ضربة |3b| فيقل الدم في البدن فلا يغذوا .

+o 4

⁵ الشيخوخة: الشيخوخة

⁶ أراسطراطس: أراسطاطليس

⁷ دائماً: دايبا

⁸ في: من

The First Chapter

1:1 The first chapter on the benefits of blood in man, its generation, and how it flows in the parts until it becomes proper nutriment.

1:2 Abū Bakr Muḥammad ibn Zakariyyā' al-Rāzī said: Indeed, blood is the most balanced of the humours, and it can be preferred to most humours, since it is needed, for it is the innate heat that is the foundation of life, as wood for the fire, or as oil for the lamp, and it fattens the body, makes it healthy, and makes the worries go away, and it prevents the illnesses phthisis and marasmus, and cures the liver, in the health of which we are healthy, as Galen said: “if we are healthy, it is due to the health of our liver”. He commanded us to gradually increase nutriment as long as there is no immoderateness or spoilage of digestion, nor any excess that prevents the body from motion, and keeps it away from its natural activity. This is to be preferred as it attracts the blood that is the contrary of old age, which is cessation of being.

1:3 Galen has said about Erasistratus⁹ that he used to avoid phlebotomy, sparing blood, and considered abstaining from food and reducing it a substitute for phlebotomy.

1:4 This would have been possible if he had not been confronted by the vehemence of blood that remains in the patient, until he reduces his nutriment.

1:5 Blood is also the substance of real nutriment that Hippocrates mentioned when he said that there are three kinds of nutriment: the most proper and suitable of these three to become nutriment is that which resembles what is being nourished. The parts are nourished by it through the veins to which it flows out similar to vapour. It replaces that which is constantly dissolved from them.

1:6 The second is *quasi-nutriment*, which is the blood that is present in the veins. Since this blood may be affected by an ailment of inflation of veins in any site in the body, or something else due to a fall or a blow, [3b] then the blood might be reduced in the body, and they¹⁰ are not nourished.

⁹ Ms. Escorial reads Aristotle, see commentary.

¹⁰ I.e., the parts.

٧:١ والثالث ما سيغذوا في المستأنف وهو الطعام الكائن في المعدة الذي بالعرض فيه أن يكون مادة الغذاء الحقيقي إلا أن تقع به آفة من قيء أو غيره من إسهال أو يصير في حد ما تشبه بالغذاء ثم تقع به الآفة التي ذكرنا فلا يغذوا أيضا.¹¹

٨:١ قال فإن قال قائل كيف يصير الدم إلى الأعضاء على طريق البخار فيغذوها قلنا له إنَّ المعدة وضعها كقدر عظيمة حولها مواقد¹² نار كثيرة يمنة منها الكبد ويسرة الطحال ومن فوق الحجاب والشرب مغشى لجميع ذلك ولجميع سائر الأحشاء والأمعاء في الإنسان خاصة وذلك بسبب ضعف هضمه ورقة جلده وعدم شعره بالإضافة إلى سائر الحيوان فعوضَ بكثرة الثرب كما شاء الباري تعالى.

٩:١ وإذا أحست المعدة بالحاجة إلى الغذاء بالعصب الجاري إليها من الدماغ بامتصاص العروق التي بين أسفل المعدة والكبد ووردها الطعام لزمته واحتوت عليه وانغلق البواب.

١٠:١ وفي بعض الحيوان جعلَ في البواب شبه الغدة ليزيده لزوماً فلا يزال كذلك حتى يتم هضمه ويصير الطعام شبيهاً بعصارة ويدفع حينئذ رديئه ويصلح الباقي. وتجذبه العروق بعد أن يتغير تغيراً قريباً من تغيره في الكبد ودفعها إلى الكبد يكون من طريق واحد يسمى باب الكبد وصورته كصورة عرق إلا أنها لا تجري دماً وتتشعب من أصله عروق مفرقة في جرم الكبد وفيها ينطبخ ويتميز من المرتين.

١١:١ ولولا ما يخالط الدم الذي في العروق المتصلة من الأمعاء والمعدة والكبد والعروق المستقيمة من المائية لما وصل الدم في هذه المواضع لضيقها والماء لا يغذوا البتة.¹³

+o 11

12 مواقد: موايد

+o 13

1:7 The third is *destined nutriment*, and this is the food in the stomach that is destined to be a matter of proper nutriment, unless it is affected by vomiting or some other kind of purgation occurs to it, or that it reaches the degree of being quasi-nutriment, then is affected by the affliction that we have mentioned, so that it does not provide nourishment either.

1:8 He said: If someone were to say: ‘How does blood flow into the parts as a vapour, thus nourishing them?’, we would tell him that the position of the stomach is as if it was a large cauldron, around which there are a lot of burning hearths, on the right side of it is the liver, and on the left side the spleen, and above it the diaphragm, and the omentum is covering all that and all the rest of the viscera and the intestines, particularly in the human being, and that is because of his weak digestion, delicate skin, and absence of hair in comparison to the rest of the animals, thus he was compensated by a large omentum, as the Creator Almighty wanted.

1:9 Whenever the stomach feels the need for nutriment by means of the nerve running to it from the brain, and the veins between the lower part of the stomach and the liver attract the food and bring it to it, then it clings to it and holds it [i.e., nutriment], and the pylorus gets closed.

1:10 In some animals, there has been placed in the pylorus something that resembles a gland to increase its retention [i.e., of the food]. And it remains that way until its digestion is completed, and the food becomes similar to juice, and at that time it expels what is bad so that what remains is good. And the veins attract it after it undergoes a transformation similar to its transformation in the liver, and its expulsion to the liver takes place via one path that is called the *porta*.¹⁴ Its shape is like the shape of a vein, except that no blood flows in it, and separate veins branch out from its origin in the body of the liver in which it is cocted and separated from the two biles.

1:11 Had it not been for the watery fluid that mixes with the blood that is in the veins that connect the intestines, the stomach, the liver and the straight veins, the blood would not reach these sites for the sake of their narrowness, and the water would not nourish at all.

¹⁴ Lit. door of the liver.

١:١٢ وينبت من حدبة الكبد عرق عظيم منه نبتت إلى جميع العروق الغير ضوارب على ما ذكر |4a| المشرحون وأصل هذا العرق ينقسم في الكبد إلى أقسام شعرية فيلتقي مع الأقسام المنقسمة من المجرى الذي يسمى الباب فيأخذ منها الدم الذي قد بقي من أكثر المرتين والمائة بالآلات الموضوعه لذلك .

١:١٣ ثم إن بعضها تأخذ من بعض لأنها متصلة كما قال أبقراط في كتابه في الغذاء .

١:١٤ إن الإنسان واحد مشترك والعروق إذا تشعبت وصارت إلى أقاصي البدن اتصل كل عرق منها بعضو يقيم غذاءه . أعني أنه يتصل بالطعام عروق دقاق لأنها بطيئة التحليل باردة فهي تحتاج إلى غذاء قليل .¹⁵ والقلب وإن كان صلبا فهو يحتاج إلى عروق كبار لكثرة تحليله والدماغ وإن كان ليناً فإنه يحتاج إلى غذاء قليل لقله حرارته وهكذا سائر الأعضاء على هذه النسبة . فسبحن خالق هذا ومدبره .¹⁶

١:١٥ ثم إن إذا صار هذا الدم في هذه العروق إلى هذه الأعضاء التي ذكرنا لم يكن للدم خروج منها بعد تمام هضمه وبقاء سيره إلا على طريق البخار والرشح .

١:١٦ وإن شئت تقول على طريق المجاورة والمماسه كالشيء المسخن أو المجفف أو المرطب أو المبرد لما ماسه أو جاوره فيجب من هذا أن تكون العروق مبنوثة في البدن إذ هي الموردة¹⁷ للغذاء إليه .

١:١٧ وكان الإنسان من داخله مطبق بالعروق وذلك أنك لو غرزته بإبرة قد ما يتفق ألا يخرج من موضع الغرزة إلا الدم والدم لا يخرج إلا من عرق .

١:١٨ فيدل على هذا أنك حيث تغرز ويخرج الدم تصادف عرقا .

¹⁵+o

¹⁶+o

¹⁷ الموردة: المردية

1:12 A large vein grows from the convexity of the liver, from which it grows into all the non-pulsatile veins, according to what the [4a] anatomists have mentioned. And the origin of this vein is divided in the liver into capillary parts, so that it meets the parts that separate from the vessel that is called the *porta*, and takes from them the blood that remains from the major portion of the two biles and the watery fluid by the instruments assigned for it.

1:13 Thereafter, they take from each other, because they are connected, as Hippocrates said in his book, *Nutrimet*.

1:14 Indeed the human is one single person [with communicating parts], when the veins branch out and reach the extremities of the body, each vein connects to a part and provides it with nutriment. I mean that thin veins transport little food to parts that are slow to dissolve and cold, and thus, need little nutriment. But the heart, even if it is solid, needs large veins because it dissolves a lot, and the brain, even if it is soft, needs little nutriment because of its low temperature, and so forth for the rest of the parts in accordance with it. And glory to the Creator and ruler of this!

1:15 Then, as this blood flows through these veins into these parts that we have mentioned, the only exit for the blood from them is as vapour and through exudation after being completely digested and still flowing.

1:16 If you desire, you can say [that nutrition occurs] through that which is adjacent and in contact, just as something that heats, dries, dampens, or cools, when it touches or is adjacent, then due to this the veins must be dispersed in the body so that they can supply nutriment to it.

1:17 A human being is from the inside coated with veins, and thus, if you pierce him with a needle, what occurs is that only blood flows out from the site of the stitch, and blood does not flow out from anything but a vein.

1:18 What indicates this is that you, when you pierce, and blood comes out, encounter a vein.

الباب الثاني

- ١: ٢ الباب الثاني في الأحوال التي يجب أن ينظر فيها من كان عازما على الفصد .
- ٢: ٢ أولها القوة والسن والمهنة والعادة والمزاج والزمان الحاضر والبلد وما يؤكل ويشرب وفي نسبة الأخلاط في البدن أهى على التساوي أو مختلفة. ¹⁸
- ٣: ٢ أما القوة فهي ملاك الإنسان وعماد |4b| حياته وهي كالزاد للمسافر ¹⁹ الذي لا يقطع مسافة إلا على قدر زاده .
- ٤: ٢ فكَذلك القوة متى قُصرت لم يبلغ المريض منتهى مرضه ولا يُقدم على الفصد والإسهال إلا بثباتها حتى أنّ الطبيب للحاجة إلى القوة ربما رخص للعليل في الغذاء الرديء إذا اشتهاه ويخلط له بجيد عند رجاء حفظ قوته وغذا المحموم في وقت نوبة الحمى لئلا تسقط قوته على أنّ الغذاء في وقت النوبة مما يزيد في الحمى .
- ٥: ٢ وقد شهد بذلك أبقراط حين قال فأمنع من الغذاء في وقت النوبة .
- ٦: ٢ وأيضا فقد يُغذا العليل إذا تحققت المتطبيب أنّ المرض مزمن بالغذاء الغليظ مد يأتي على العليل أربعة عشر يوما . وإن كان هذا يزيد في مرضه خيفة أن تسقط القوة قبل منتهى المرض وزواله فيكون ذلك سببا لهلاك العليل وقد يمنع من الغذاء جملة إذا تحققت أن المرض ينقضي في الأيام الأول وآخرها اليوم الرابع إن تحققت أن القوة تبقى بذلك .
- ٧: ٢ وقد شرح ذلك أبقراط حين قال المرض البالغ في اللطافة جدا ينبغي أن يدبر بالتدبير البالغ في اللطافة جدا ²⁰ ويُعنى بذلك ترك الغذاء جملة .
- ٨: ٢ فإن علم أنّ القوة لا تبقى بالترك سُقي العليل الجلاب .

¹⁸ מתהלפות corrupt, Ms. Parma
¹⁹ خ للمسافر above the word للراكب
²⁰ [sic]

The Second Chapter

2:1 The second chapter on the circumstances that shall be considered by whoever is determined to perform phlebotomy.

2:2 The first one of them is strength, [then] age, occupation, custom, temperament, the season, country, what is eaten and drunk, and the relation of the humours in the body, whether they are balanced or unbalanced.²¹

2:3 As to strength, it is the subsistence of the human, and the foundation of [4b] his life, and it is as the provisions for the traveller²² who does not cross a distance unless by the power of his provisions.

2:4 Thus, when his strength is reduced, the patient does not reach the end of his illness, and one should not undertake bloodletting nor purgation unless one is certain [that it will be beneficial]. For the sake of strength, the physician may even permit bad food for the patient in case he has a strong desire for it, and mix it with good [food] for him, thus hoping to preserve his strength. Someone who suffers from fever should be given food at the moment of the paroxysm of fever, so that his strength will not diminish, although nutriment at the time of the paroxysm intensifies the fever.

2:5 Hippocrates testified to that when he said: “Abstain from food at the time of the paroxysm.”

2:6 Additionally, if the physician is certain that the illness is chronic, the patient may be fed with coarse food for a period of fourteen days. Should this lead to increased fear that his strength would diminish before the end and cessation of his illness, being the cause of the death of the patient, he may be restrained from food completely. [He may only do so] if he was certain that the illness will be terminated during the first days, maximum on the fourth day, and that the patient would keep his strength anyway.

2:7 This was explained by Hippocrates when he said: “[in the case of] a very acute illness one has to apply a very restricted regimen”, by which is meant the complete abandonment of food.²³

2:8 If he [i.e., the physician] knows that the strength does not remain when [food] is abandoned, the patient shall be given julep to drink.

²¹ Lit. divergent, understood as diverging from balance.

²² See commentary.

²³ Passage possibly corrupt, see commentary.

٢:٩ فإن علم أيضا أنّ القوة لا يمسكها هذا أعطى ماء الشعير أو اللباب المغسول بالسكر الطبرزدي وما أشبه ذلك .

٢:١٠ وأما السن فإن الصبيان ما لم يبلغوا سن الفتيان وهو أربعة عشر سنة لا يجب أن يفسدوا وذلك أنّهم يحتاجون من الوفور وهو الغذاء أكثر وأيضا فيتحلل منهم كثير وأبدانهم رطبة وعصبيهم بعد ضعيف .

٢:١١ وكذلك المشايخ وهو من حد الستين سنة والفسد ينفع فيما بين هذين السنين .

٢:١٢ وما فوق ذلك فلا يحتملون الفسد ولا الإسهال على |5a| الأكثر لقلة دمائهم وضعف هضمهم .

٢:١٣ وقد ذكر جالينوس أنه فسد شيوفا أبناء سبعين سنة وهذا أقل ما يتفق .

٢:١٤ وقد كان بمدينة مصر رجل بغدادى يتصرف في خدمة²⁴ السلطان وكان يلزمني تدبيره وسنه يومئذ نيف وسبعون سنة . كنت أفصده في كل خمسة وعشرين يوما وما قرب منها في جميع الأزمنة .

٢:١٥ وربما اتفق أن يحتاج إلى الفصد والزمان حديد من الحر والبرد فأمطله بذلك وأشير عليه بأخذ الأشرية المطفئة لسورة الدم كشراب حصرم وشراب رمّانين وشراب عناب ومن الأغذية السكباج والحصرمية والرمانية والسماقية والعدسية .

٢:١٦ فيفعل ذلك يوما أو يومين فيضطره من الأمر وشدته ما يخيل إليه أنه فاضت منه²⁵ نفسه ويختنق حتى يسكن ذلك بالفصد .

٢:١٧ وكان خصيبا >بدنه واللون فيه مشرق جيد البنية<²⁶ وكنت أخرج له من الدم في كرتين قرب ثلاثة أرتال .

٢:١٨ وليس لخروج الدم في الناس حد محدود في القلة والكثرة.²⁷

²⁴ في خدمة + MS

²⁵ added below منه

²⁶ < > in the margin to complete مشرق جيد البنية

²⁷ +o

2:9 And if he also knows that this does not retain the strength, he shall give [the patient] barley broth or bread pith washed with crystalline sugar and the like.

2:10 As to the age, the boys who have not reached the age of adolescence, that is fourteen years, are not to be phlebotomised, they namely need the ample [food], a lot of it, also, because a lot is dissolved from them, their bodies are moist, and their nerves are still weak.

2:11 The same goes for old men, i.e., from the beginning of sixty years. Thus, phlebotomy is beneficial for people between these two ages.

2:12 And who are above that neither tolerate phlebotomy nor purgation in [5a] most cases due to their low quantity of blood and weak digestion.

2:13 Galen mentioned that he phlebotomised old men in the age of seventy years, yet this does not occur often.

2:14 There was a Baghdadi man in al-Fuṣṭāṭ, working in the service of the sultan, and I was obligated [to take care of] his regimen, and at that time he was around seventy years old. I used to phlebotomise him every twenty-five days or so during all seasons.

2:15 Sometimes it happened that he needed phlebotomy in a severely hot or cold season, in which case I would postpone it for that sake, and advise him to take syrups that quench the vehemence of the blood, such as verjuice, syrup of both [types of] pomegranates, and jujube syrup; and of the foods *sikbāğ*, *hişrimiyya*, *rummāniyya*, *summāqiyya*, and *ʿadasiyya*.

2:16 He would do so for a day or two, but then he was forced to quit as his condition became so severe that it would seem to him as if his soul would depart from him,²⁸ suffocated until that abated through phlebotomy.

2:17 His <body> was fat, <its colour healthy, and he was well-built>;²⁹ I used to extract approximately three *raṭls* of his blood in two sessions.

2:18 There is no fixed limit regarding how little and how much blood should be extracted from people.

²⁸ I.e., die.

²⁹ < in the margin

١٩: ٢ فقد ذكر جالينوس أنه استفرغ من قوم من الدم نحو الستة الأرتال فانتفخوا بذلك وآخرين أخرج لهم رطلين أضر ذلك بهم .

٢٠: ٢ وحكى قسطاس في المقالة في القوة والضعف عن عبد الله الرازي أنه فصد³⁰ في خمسة أشهر متوالية ست عشرة فصدّة وأخرج له في كثير منها ثمان مائة درهم كيلا وأقل ما أخرج له منها ست مائة درهم كيلا .

٢١: ٢ وأما المهنة فإنه من كان مباطشا كثير التعب والحركة والجماع والسهر والهم والفكر في العلوم الدقيقة فيجب أن يقلل من إخراج الدم وبالضد³¹ .

٢٢: ٢ وأما العادة فقد قالت فيها القدماء إنها طبيعة مكتسبة فيجب أن لا تقدم على فصد من لم يفتصد قط . وقد من له من عمره |5b| ما يجب له فيه أن يفصد إلا بعد نظر وتوقف .

٢٣: ٢ وأما المزاج فأحمل الأبدان للفصد الحارة الرطبة الخصبية الكثيرة اللحم المشوية بحمرة الواسعة العروق الظاهرة المتكاثفة الشعور . وليكن الحذر في الفصد على قدر البعد من هؤلاء والقرب .

٢٤: ٢ وقد نرى أبدانا خصبية سمينة قليلة الدم ومهزولة كثيرة الدم .

٢٥: ٢ فقد حكى جالينوس في كتاب أفديميا³² عن امرأة احتبس طمثها ثمانية أشهر وكانت في غاية الهزال ففصدها فعاد بدنّها إلى عادته الأولى . وكان الأطباء يمنعون من ذلك سيما أنّ شهوتها كانت مختلفة . وأخرج لها من الدم في ثلاثة أيام نحو ثلاثة أرتال : في اليوم الأول رطل <ونصف>³³ وفي اليوم الثاني رطل وفي اليوم الثالث أرجح من نصف رطل . والذي دعاه إلى فصدها سوء احتباس حيضها إنّ عروقها كانت دائرة مملوءة دما يضرب إلى الكمودة . فلما فصدها وأخرج الدم كالزفت السيال استدعاه ذلك إلى الإكثار منه .

³⁰ إنسانا أظنه هذا وأما الأمر المنتسخ منها هذه فليس فيها شيء in the margin
³¹ +o

³² أفديميا: أقديميا

³³ ونصف in the margin

2:19 Galen mentioned that he evacuated from people's blood around six *raṭls*, and they benefitted from that, while from others he extracted two *raṭls*, which harmed them.

2:20 In his treatise, *On Strength and Weakness*, Qusṭās³⁴ spoke about 'Abdullāh al-Rāzī, who phlebotomised [a patient] sixteen times in the course of five consecutive months, and that many times he extracted eight hundred *dirhams*³⁵ and the least that he would extract from him was six hundred *dirhams*.³⁶

2:21 As to the occupation, indeed in the case of someone who is hard-working, and with a lot of fatigue, movement, coitus, insomnia, worries, and rational thinking in sciences that require concentration, one should reduce the evacuation of blood, and the opposite.

2:22 As to the custom, the Ancients have said that it is an acquired nature, thus who never has been phlebotomised should not proceed to phlebotomy. And if someone at some time during his life [5b] should be phlebotomised, this should only be done after careful consideration and hesitation.

2:23 As to the disposition, the most tolerant bodies for phlebotomy are those that are hot, moist, fat, abundant with reddish flesh, with wide, visible veins, dense hair. One's caution in phlebotomy should be in accordance with the degree to which the patient's body possesses these properties.

2:24 We may also see bodies that are fat, obese, with a small amount of blood, as well as skinny [bodies] with a lot of blood.

2:25 Galen spoke in [his commentary of] the book *Epidemics*³⁷ about a woman who suffered from amenorrhea for eight months and she was very emaciated, so he phlebotomised her, and her body returned to its former state. And the [other] physicians used to abstain from that, especially since her appetite was different [from the usual]. And during the course of three days, he extracted around three *raṭls* of blood: in the first day a *raṭl* <and a half>,³⁸ in the second day one *raṭl*, and in the third day most likely half a *raṭl*. And what urged him to phlebotomise her was the severity of her amenorrhea, although her veins were filled with copiously flowing dark grey blood. Thus, when he phlebotomised her and extracted the blood [that was] as liquid tar, he was forced to extract a larger quantity [i.e., more than he initially intended].

³⁴ Qusṭā ibn Lūqā. See commentary.

³⁵ درهم كیلا

³⁶ درهم كیلا

³⁷ Galen's commentary on Hippocrates' *Epidemics*.

³⁸ < in the margin.

٢: ٢٦ وهل رأيت بمدينة السلام³⁹ رجلا من ولد محمد بن عبد الملك الزيات⁴⁰ وسنه⁴¹ نيف وأربعون سنة وكان من قضاة البدن وصفرة اللون على غاية وكان يعرض له في كل شهر أو ما زاد قليلا أن يحمر جسمه وينخنق ويحس كأن نفسه يمسك حتى يلجأ إلى الفصد؟ وكان يخرج من الدم قرب خمسة عشر درهم كيلا فكان يأنس بالراحة في الوقت . وكان الذي يعرض لهذا احتراق الدم لاكثرته .

٢: ٢٧ وأيضا كان هذا الرجل قد قرأ كثيرا من كتب جالينوس على معلم ولم تكن له دربة ولا خدمة . وكان يعرض له قديما قبل لقائي إياه اعتقال طبعه فكان يلجأ إلى الأشربة اللينة كشراب البنفسج أو شراب الإحاص أو شراب التين أو شراب القراسيا |6a| أو نحوها . ولم يزل يفعل هذا حتى أمسك طبعه حتى صار لا يجيبه إلا بدواء مسهل .

٢: ٢٨ فحين لقيتُه أخبرني أنه تمتسك طبيعته خمسة أيام حتى يأخذ من حب الإهليلج الأصفر . صفته أن يأخذ الإهليلج الأصفر المنزوع النوى فيغم في الماء ويجعل في الشمس في وقت القَيْظ⁴² أربعين يوما حتى يذهب الماء وينعقد بعد أن يُحرَّك في كل يوم مرات . ثم يُحبَّب ويؤخذ بالسكر والمحمودة .

٢: ٢٩ وبالجملة الرجال أحمل للفصد من النساء .

٢: ٣٠ وأما الزمان فإنَّ الربيع أفضل الأزمنة للفصد .

٢: ٣١ فقد ذكر جالينوس أن كثيرا بمدينة رومية يفتصدون بغير حاجة إلى الفصد في هذا الزمان للعادة وثقتهم فإنَّ الخطأ إن وقع فيه لم يكن ضره بكثير . والناس في سائر ما رأيناه من البلدان العظام على هذا المنهاج .

³⁹ بمدينة السلام : بمدينة السلام

⁴⁰ محمد بن عبد الملك الزيات : أحمد عبد الملك الزيات

⁴¹ سنه clarified in the margin

⁴² القَيْظ : القَيْظ

2:26 Have you seen a man in Baghdad,⁴³ from the offspring of Muḥammad ibn ‘Abd al-Malik al-Zayyāt, who was forty and some years old, and who had a slender body and was extremely pale,⁴⁴ but every month or so it happened to him that his body turned red and he was unable to breathe and felt as if his breath was retained until he resorted to phlebotomy? Nearly fifteen *dirhams*⁴⁵ of [his] blood would be extracted, and he would feel relieved immediately. What happened to him was a combustion of the blood, not its abundance.

2:27 Also, this man surely had studied a lot of Galen’s books with a teacher, [yet] had no experience nor clinical practice. A long time ago, before I met him, he would suffer from constipation,⁴⁶ and would resort to softening syrups, such as that of violet, plum, fig, cherry [6a] or something similar to them. He became so constipated that only a purgative drug would trigger a reaction.

2:28 And when I met him, he informed me that he would suffer from constipation for five days until he would take one yellow chebulic myrobalan pill. Its prescription is that one takes the yellow myrobalans from which the kernels have been removed, covers them with water and places them in the sun in high summer for forty days until the water is gone, and it thickens after being stirred some times every day. Then it is made into a pill and taken with sugar and scammony.

2:29 In general, men are more tolerant to phlebotomy than women.

2:30 As to the season, the spring is the most optimal season for phlebotomy.

2:31 Galen mentioned that many [people] in Rome get phlebotomised without the need for phlebotomy during this season because they are used to doing so and trust [its efficacy], and if there was to occur a mistake, it would not cause a considerable harm. People in all the other great cities that we have seen follow this manner.

⁴³ *Madīnat al-Salām*.

⁴⁴ Ms. Escorial reads ‘yellow’, understood as ‘pale’.

⁴⁵ درهم كیلا

⁴⁶ Lit. ‘detention of his nature’.

٢: ٣٢ ثم يليه في الجودة الشتاء ثم الصيف ثم الخريف . وأما الوقت الحاضر فليس يجب أن يُستعمل الفصد في يوم شديد الحر والبرد إلا إنْ تدعو إلى ذلك ضرورة .

٢: ٣٣ وأما البلدان فإنّ البلدان الواغلة في الشمال ناحية بنات نعش والفرقدين باردة جدا . هي الواغلة في الجنوب نحو سهيل حارة جدا . وكلما قرب أو بعد من هاتين الجهتين فعلى هذه النسبة .

٢: ٣٤ وبالجملة البلدان الباردة تصح وأهلها أقوى وأحسن الوانا وأبدانا والبلدان المائلة إلى الجنوب أحر أبدانا من المائلة إلى الشمال وإنْ استوت مواضعه من الفلك كما أنّ البلدان قد يحدث لها تغير من أمور تخصّها من قبل الجبال المقابلة والمؤثرة⁴⁷ والعلو والانخفاض والبحار والأنهار والأشجار وغير ذلك . وإنْ استوت عروضها وأحمل الناس للفصد من كان فيما بين هاتين الناحيتين |6b| مائلا إلى الشمال وكان بلده مكشوبا للشمس مستورا عن المغرب .

٢: ٣٥ وأما ما يؤكل ويشرب فعلى الأمر الأكثر من أكل اللحم الفتى والحلواء وشرب الأنبذة يكثر دمه .

٢: ٣٦ وأما من نسبة الأخلاط في البدن فهي على التساوي أو مختلفة فإنّ معرفة هذا صعب جدا ولا يدرك إلا على التقريب .

٢: ٣٧ فقد صرح أبقراط بهذا حين قال : معرفة الكميّة صعب جدا كثير المنفعة وذلك أن يعرف مقدار الأخلاط في البدن وزيادة بعضها على بعض ومقدار ما يخرج غير الحاجة إلى ذلك .

٢: ٣٨ على الحقيقة صعب جدا إلا إنّ الطبيب الكثير القراءة لكتب الأوائل . وما نتجه المرءون يُدرك على هذا التقريب جدا حتى لا يُسمّى ما فاته من معرفة الحقيقة خطأ . فمتى حقق المتطبب أنّ الخلط الغالب في البدن الدم وأنّ الأخلاط في البدن [ليست] على التساوي استعمل الفصد لأنّ الدم تخرج معه جميع الأخلاط .

٢: ٣٩ كما قال جالينوس في كتابه في الأدوية المفردة : وإنْ كان الدم الأقل ابتدئ بالإسهال للخلط الغالب في البدن إن شاء الله .

⁴⁷ والمؤثرة : والمواثرة

2:32 The next best season [for phlebotomy] is winter, then summer, and then autumn. As to the current time, one should not use phlebotomy on a very hot or a very cold day, unless necessary.

2:33 As to the countries, indeed the countries high in the north, in the direction of the Big Dipper and the two bright stars of Ursa Minor are very cold. The ones deep in the south, towards Canopus, are very hot. And whatever is near or far from these two sides, correspondingly.

2:34 In general, cold countries are healthy, and their people are stronger and better in complexion and body, and the bodies [of people in] southern countries are hotter than the [bodies of people] living in the northern countries, even if their positions from the celestial sphere were equal. On the other hand, countries are different because of their specific matters, [e.g.] mountains that face [people] and influence [them], and because of the altitude [of their country], its depth, seas, rivers, trees, and the like. Even if the latitudes were equal, the most tolerant people for phlebotomy are the ones who regarding these two directions [6b] live in a northern country that is exposed to the sun, hidden from the sunset.

2:35 As to what shall be eaten and drunk, in most cases the blood increases by eating young meat and confections, and by drinking wines.

2:36 As to the relation of the humours in the body, whether they are balanced or unbalanced,⁴⁸ indeed knowing this is very difficult, and can only be grasped approximately.

2:37 Hippocrates declared this when he said: “Knowing the quantity is very difficult, [yet] very beneficial, and that is to know the amount of the humours in the body, and the increase of one over the others, and the quantity of what flows out unnecessarily.”

2:38 It is truly very difficult, unless the physician is well-read regarding the works of the Ancients, and what has been brought forth by the masters leads to this very approximation, so that what has escaped him regarding knowing the truth should not be called a mistake. And when the physician verifies that the predominant humour in the body is blood, and that the humours in the body are [not] balanced, he should apply phlebotomy, since all the humours get extracted with blood.

2:39 As Galen said in his book *On Simple Drugs*: If [the quantity of] blood is less [than the other humours], then begin with the purgation of the dominant humour in the body, God willing.

⁴⁸ Lit. divergent.

الباب الثالث

١: ٣ الباب الثالث نذكر فيه الأسباب الموجبة للفصد .

٢: ٣ يؤكد الأسباب الموجبة للفصد .

٣: ٣ الامتلاء وهو ينقسم قسمين: أحدهما النظر بحسب الأوعية وهي العروق وهو أن تكون العروق والشرايين مملوءة دما وروحا وسائر الأخلاط على نسبتها التي كانت عليه قبل زيادة الدم والبدن صحيح ويتبعه التمدد والقربان وكأن العروق تتمزق وتنفثح ويكون الوجه مع ذلك مشرقا كأنه يقطر دما والنوم كثير والتمطى والتثاؤب وثقل الرأس وعظم النبض وغلظ البول وحمرة⁴⁹ وكدر الحواس |7a| وبلادة الذهن وحلاوة الفم وتبثيره وخروج الدم منه والدماميل⁵⁰ التي تنفجر بسرعة .

٤: ٣ فإن انضاف إلى هذا أن يكون لمس البدن حارا إلى اللين كأنه قد خرج من الحمام وهو لحم والسن من الفتیان والعروق واسعة والغذاء المتقدم يوجب ذلك كان الدليل أقوى .

٥: ٣ وهو يوكد هذه الأحلام كما ذكر أبقراط في كتاب أفديميا⁵¹ وذكر روفس⁵² في كتابه فيما يسأل⁵³ عنه الطبيب العليل وذلك أنه من رأى جراحا ودما سائلا وألوانا حمراء دل على الحاجة إلى إخراج الدم وهذا يتبين في سائر الأخلاط فإن من رأى ثلجا ومطرا دل على كثرة البلغم .

٦: ٣ وأما الامتلاء بحسب القوة فهو الذي تزيد الأخلاط فيه على قدر ما تفي الطبيعة بحفظ الترويح عنه ويتبعه الثقل والكسل والاسترخاء وعسر الحركة وقلة الشهوة للغذاء وضعف القوة عن النهوض بما في البدن من الأخلاط حتى أن الطبيعة لا تقدر أن تهضم ما صار إليها في العروق إن تصيره غذاء فتنقيه عجزا منها عن إحالته .

49 حمرةته repeated below the line

50 ميل in the margin

51 أفديميا: أفديميا

52 روفس: روفس

53 يسأل: يسأل

The Third Chapter

3:1 The third chapter in which we mention the causes that make phlebotomy necessary.

3:2 I confirm the causes that make phlebotomy necessary.

3:3 [It is necessary in the case of] overfilling, which is divided into two parts: one of the two is the one relating to vessels, i.e., the veins, and that is when the veins and the arteries are filled with blood, pneuma, and the rest of the humours in the same proportion that they were before the increase of blood, and the body is healthy. It is followed by tension and contraction, as if the veins are ruptured and opened, and with that the face is shining as if it is dripping blood. There is a lot of sleep, stretching, yawning, heaviness of the head, magnitude of pulse, thick and red urine, troubled sensations, [7a] apathy, sweetness of mouth, its vesication, and blood flowing out of it, and boils that burst quickly.

3:4 If this is combined with the feeling that the body is hot and soft when one touches it, as if he [i.e., the patient] just came out of the bath, and he is corpulent, in the age of adolescence, and the veins are wide, and the preceding food imposes that, then the indication is stronger.

3:5 It brings forth these dreams, as Hippocrates mentioned in his book, *Epidemics*, and as Rufus⁵⁴ mentioned in his book, *On what the physician asks the patient*,⁵⁵ that if someone sees wounds, blood flowing [from them], and red colours [in his dreams], this indicates the need for extraction of blood, and this is obviously the case in the other humours [as well], for whoever sees snow and rain, this indicates the large quantity of phlegm.

3:6 As to the overfilling affecting the strength [of the patient], it is the case in which the humours increase to the extent that [the patient's] nature is not sufficient to ensure a recovery from it, and it is followed by heaviness, laziness, feebleness, difficulty of movement, lack of appetite, and weakness of strength to manage the humours in the body, until one's nature cannot digest what has come to it in the veins. If food reaches it, then she cleanses it, since she is unable to transform it.

⁵⁴ Rufus of Ephesus.

⁵⁵ *Quaestiones medicinales*. See commentary.

- ٧: ٣ وإن كانت هذه الأعلام قد تحس للامتلاء بحسب <الأوعية فقد يُفترق بينهما بالبول>⁵⁶ والنبض وغير ذلك مما قد ذكرناه.
- ٨: ٣ فإن النبض في الذي بحسب القوة صغير والبول إلى الفجاجة واللون غير مشرق وفي أكثر الأمر يوكد مرضا قبل أن تتم علاماته.
- ٩: ٣ وكل هذين الامتلاءين يوجبان مرضا ويحوجان إلى الاستفراغ.
- ١٠: ٣ أما الامتلاء الأول فهو الذي بحسب الأوعية فحاجته إلى الفصد وإلى تقليل الغذاء.
- ١١: ٣ وأما الامتلاء الثاني وهو الذي بحسب القوة فقد يحتاج إلى الفصد والاستفراغ ويحتاج إلى توقّف ونظر وأن تؤخذ الدلائل التي يجدها العليل من مواضعها المخصوصة بها وذلك أنه قد يكون في البدن من هؤلاء أخلاط |7b| نيئة فمتى فصد من هذه حاله استرخى وضعف ويرد مزاجه وصار مستعدا للأمراض الباردة حتى لا يمكن أن يرد إلى حالته الأولى. والخطر هاهنا عظيم جدا وخاصة إذا كان الوقت صيفا⁵⁷ ومعدته وكبدته باردتين والمزاج إلى اللين.
- ١٢: ٣ وينفع من كان بهذه الصفة إن كان الوقت متمكنا الاستفراغ بالاسطماخيقتونات وإيارج الفيقرأ على حسب الحاجة والحقن الحادة ودخول الحمام والأدهان المعتدلة وتقليل الغذاء وتلطيفه وأغذية قليلة الأغذية.⁵⁸
- ١٣: ٣ وقد يُخرج لهم من الدم اليسير ويُفعل ذلك في مرات.
- ١٤: ٣ ومن عرض له نفث دم وبرئ منه فقد يتقدم في فصده في أوان الربيع وإن لم يكن في بدنه دليل امتلاء خيفة أن ينهتك في صدره عرق.
- ١٥: ٣ وكذلك من يتخوّف عليه الصرع أو السكتة الدمويتان أو العروق⁵⁹ التي في المقعدة أو الأورام العارضة في الرئة والشوصة والخوانيق وأوجاع المفاصل والنقرس والحميات المطبقة والدموية.

⁵⁶ < > in the margin; بالبول written once in the text, once in the margin

⁵⁷ صيفا: ضيقا

⁵⁸ الأغذية: الأغذاء

⁵⁹ פתיחת הגידים: Ms. Parma

3:7 Even if these signs [occur], you may feel overfilling relating to <vessels, and the two may be differentiated by the urine>⁶⁰ and the pulse, and other things that we already have mentioned.

3:8 For indeed the pulse in overfilling affecting the strength is small, the urine is yellowish green, and the complexion is not clear, and most probably it is generating an illness is before its signs are fully developed.

3:9 Both of these two [types of] overfillings cause an illness and require evacuation.

3:10 As to the first [type of] overfilling, that is the one that is relating to the vessels, it requires phlebotomy and reduction of food.

3:11 As to the second [type of] overfilling, and that is the one affecting the strength, it may require phlebotomy and evacuation, and it requires hesitation and consideration, and the indications that the patient finds in their specific sites should be taken [into consideration], and that is because the body of such people might contain raw [7b] humours, and whenever one phlebotomises someone with this condition, he becomes feeble and weak, his disposition becomes cold and he becomes susceptible to cold illnesses, so that he cannot return to his former condition. The danger here is very great, especially if it is summer, and his stomach and liver are cold, and the bodily disposition tends to softness.

3:12 As for those who are characterized by this, it is beneficial, if the season allows, to use evacuation by stomachics and bitter hiera according to the need, and sharp enemas, entering the bath, moderate oils, reducing food and making it finer, and [administering] scarcely nourishing food.

3:13 And one may extract a little of their blood, and that may be done in [several] times.

3:14 Whoever has suffered from haemoptysis and has healed from it, one may proceed to phlebotomising him in the springtime, even if there is no indication of overfilling in his body, because one fears that a vein in his chest might burst open.

3:15 Likewise, for anyone suspected to suffer from sanguine epilepsy or sanguine apoplexy, or [swollen] veins in the anus, or swellings that appear in the lungs, pleuritis, diphtheria, arthritis, gout, and continuous and sanguine fevers.

⁶⁰ ◇ in the margin.

١٦: ٣ وبالجمللة كل الأمراض التي تتوقع من الدم أو سائر الأخلاط فقد يتقدم فيها بالفصد والإسهال على حسب الحاجة في وقت الربيع .

١٧: ٣ وإن لم تكن دلائل الكثرة حاضرة توقعا لما يحدث بعد ذلك وذلك أنه قد يستقبل الصيف وتطلب الأخلاط موضعا أوسع وقد ينتفع أيضا بالفصد وإن لم يكن البدن ممتلئا أحد امتلاءين عند ابتداء ورم حار إما بسبب ضربة أو سقطلة أو ألم شديد أو ضعف العضو فإنه إذا ألم أو ضعف جذب الدم إليه إذا كانت مادته متهيئة لذلك كما تجذب المحجمة الدم .

3:16 In general, all the illnesses that you expect [to arise] from [a surplus of] blood or the other humours can be tackled by phlebotomy or purgation according to the need in springtime.

3:17 Even if no indications of a surplus [of blood] are present in anticipation of what will happen afterwards – namely, the humours demand a wider space as the summer is approaching – one may also benefit from phlebotomy, even if the body is not filled with one of the [two types of] overfillings, at the beginning of a hot swelling either due to a blow or a fall, severe pain, or weakness of a part, since if it aches or weakens, it attracts blood when its matter is ready for it, just as the cupping glass draws blood.

الباب الرابع

- ١ : ٤ الباب الرابع في كمية ما يُخرج من الدم .
- ٢ : ٤ أما حقيقة معرفة قدر الدم وسائر الأخلاط في البدن ومقدار |8a| ما يحتاج أن يخرج منها عند الحاجة بالفصد أو كم مقدار الدواء المسهل المستفرغ بالإضافة إلى الأخلاط فمفسر جدا كما ذكرنا إلا أن استعمال الفصد أكثر سلامة من استعمال الدواء المسهل لأنك تقطعه متى شئت .
وأما الدواء فإذا صار إلى البطن فليس يمكنك أن تنقص منه ولا من فعله .
- ٣ : ٤ ومتى كان في البدن من الدم كثير وعلی وأحدث حمى فاستفرغه دفعة واحدة في وقت انحطاط نوبة الحمى قبل أن ينصب إلى بعض الأعضاء النفيسة لأن هذه الحمى وإن كانت مطبقة فإنما على الأمر الأكثر يكون لها ابتداء وصعود وتزید وانتهاه وانحطاط .
- ٤ : ٤ وليكن الاستفراغ إلى أن يحدث الغشي لأن رديّ الدم إذا بقي أفسد غيره وكثيرا ما يبرد بعقب الغشي البدن ويندى وتنطلق الطبيعة وينقضي المرض بسرعة .
- ٥ : ٤ وليس لخروج الدم في القلة والكثرة حد .
- ٦ : ٤ ومن أفضل ما يتعمد في وقت الفصد أن يتفقد نبض العروق من الجانب الغير مفصود ما دام الدم يسيل لثلا يلحق العليل الموت مكان الغشي . فإذا رأيت النبض قد تغير في عظمه واستوائه فضلا عن أن يضعف أو ضعفت حمية الدم فاقطعه على المقام . وكذلك متى تغير لونه وقوامه وكثيرا ما لا يتغير اللون أو القوام .
- ٧ : ٤ ومن كان به ورم قرب الموضع المفصود كالشوصة وغيرها فمن أجود الأشياء أن يخرج له الدم إلى أن يتغير في لونه وقوامه لأن الدم في هؤلاء إن كان في حال الصبغ حنيا أو أحمر فإنه يكون في الورم بسبب الغليان وتجنب في الفصد الغشي جهدك ما لم تدفع إليه ضرورة .
- ٨ : ٤ ومتى فصدت لكثرة الدم فابلق إلى الغشي .
- ٩ : ٤ وإن فصدت لاحتراقه فابلق إلى تغيير⁶¹ الدم .

⁶¹ تغيير: زخير

The Fourth Chapter

4:1 The fourth chapter on the amount of blood that should be extracted.

4:2 As to really knowing the quantity of blood and the other humours in the body, and the quantity [8a] that has to be extracted from them when phlebotomy is required, or the quantity of a purgative, evacuating drug with regard to the humours, is very difficult, as we have mentioned. However, using phlebotomy is safer than using a purgative drug, because you can end it whenever you want. As to the drug, once it has reached the stomach, you cannot reduce it nor its effect.

4:3 When there is a lot of blood in the body, and it boils, and causes a fever, then evacuate it all at once at the time of the decline of the paroxysm of fever before it flows towards some vital parts, because this fever, even if it is continuous, in most cases will have a beginning, rise, increase, climax, and decline.

4:4 Evacuation may [last] until the patient loses consciousness, since bad blood, if it stays [in the body], will corrupt the rest [of the blood]. In many cases the body becomes cold immediately after unconsciousness, and moist, and as Nature is not impeded [anymore], the illness terminates quickly.

4:5 There is no limit regarding how little and how much blood should be extracted from people.

4:6 At the time of phlebotomy it is preferable to proceed by examining the pulse of the veins from the side that is not phlebotomised as long as the blood is flowing, so that the patient does not die instead of becoming unconscious. If you see the pulse changing in its magnitude and regularity, in addition to weakening or diminished force, then end it immediately. And likewise, when its colour and consistency change, but in many cases the colour and consistency do not change.

4:7 Whoever has a swelling near the phlebotomised site, such as pleuritis and the like, then the most suitable thing [to do] is to extract his blood until its colour and consistency change, since the blood in these [people], if it is such that it changes colour towards henna or red, then it is [generated] in the swelling because of boiling. Avoid by all means phlebotomising until unconsciousness, unless it is necessary.

4:8 When you phlebotomise because there is a surplus of blood, continue until the patient loses consciousness.

4:9 If you phlebotomise because of its combustion, continue until the blood changes.

الباب الخامس

- ١: ٥ الباب الخامس في العروق المفصودة .
- ٢: ٥ العروق المفصودة صنفان فمنها ضاربة |8b| وهي الشرايين ومنشأها من القلب ومنها غير ضاربة وهي الأوراد ومنشأها من الكبد .
- ٣: ٥ وأنا ذاكر مواضعها وأسماءها ومنافعها على التوالي وأبتدئ بذلك من الرأس .
- ٤: ٥ فمن ذلك أربعة عروق خلف الأذنين في الرأس من كل جانب عرقان واحد يمينه والآخر يسرة . ويحاذايان طرف الأذنين من أعلاههما إذا الصقا بالرأس كان العرق فوق الأذن بقدر يسير . وفصد هذين العرقين نافع من البثور والقروح في الرأس والسعفة الرطبة واليابسة والجدام .
- ٥: ٥ وثلاثة عروق وهي ⁶² شرايين ⁶³ في كل أذن اثنان منهما خفيان وواحد ظاهر وفصدها ⁶⁴ نافع من السعفة ووجع العين . وذكر جالينوس عن أبقراط في كتاب الأهوية والبلدان أن من قطعت له هذه لم ينسل وقال هذا قول مقنع . ⁶⁵
- ٦: ٥ عرقان في مؤخر الرأس يليان النقرة وفصدهما نافع من البخار المرتقي وبدء الماء والانتشار .
- ٧: ٥ عرق يأتي الجبهة من وسط الرأس يتشعب هنالك شعبتين وربما أكثر فتصير واحدة يمينه وأخرى يسرة . فافصد أبدا أملاءهما . وفصدهما نافع ⁶⁶ من وجع العينين القديم والثقل الكائن في مؤخر الرأس .
- ٨: ٥ عرقان يلتويان في الصدغين وهما شريانان وفصدهما نافع من الصداع الدائم والشقيقة والانتشار ووجع العينين التي يخشي عليها الهلاك وفصدهما يكون بالبتير والسيل .
- ٩: ٥ وبالجملة يجب أن تُفصد العروق الضوارب فيما عُلِم من العلل كونه مادة حارة لطيفة ناخسة في الأغشية ووجعها يحس كأنه مركّز ثم ذلك الوجع والنخس ينبسط حول ذلك المركز .

⁶² وهي : في

⁶³ شرايين : الشرايين

⁶⁴ وفصدها : وفصده

⁶⁵ +0

⁶⁶ وفصدهما نافع : وهي نافعة

The Fifth Chapter

5:1 The fifth chapter on the phlebotomised veins.

5:2 There are two sorts of phlebotomised veins: the pulsatile [8b] i.e., the arteries, that originate from the heart, and non-pulsatile, i.e., the veins, that originate from the liver.

5:3 I mention their locations, names, and benefits consecutively, and I begin from the head.

5:4 Four veins behind the ears in the head, two veins on each side, one on the right, and the other on the left. They are aligned with the tip of the ears above them. As the two connect to the head, the vein is directly above the ear. Phlebotomising these two veins is beneficial for pustules and ulcers in the head, wet and dry cradle cap, and leprosy.

5:5 Three veins that are arteries in each ear, two of which are concealed, one visible, and phlebotomising them is beneficial for cradle cap and ophthalmalgia. Galen mentioned Hippocrates' [statement] in the book *Airs and Places*,⁶⁷ that 'whoever had these cut, will not procreate', and commented that this is a convincing statement.

5:6 Two veins in the back of the head near the hollow of the neck: phlebotomising them is beneficial for the rising fumes, watery discharge, and *intišār*.⁶⁸

5:7 A vein comes to the forehead from the middle of the head, dividing there into two branches, sometimes more, one flows to the right, another to the left. Always phlebotomise them when they are full. Phlebotomising the two is beneficial for chronic ophthalmalgia and the heaviness that is [felt] in the back of the head.

5:8 Two curved veins in the temples, they are two arteries: phlebotomising the two is beneficial for chronic headache, migraine, *intišār*, and ophthalmalgia that make one afraid of dying. Phlebotomising the two is done by making an incision and [letting the blood] flow.⁶⁹

5:9 In general, the pulsatile veins need to be phlebotomised when it is known that the illnesses are caused by a hot, fine, pricking matter in the membranes, and the pain feels as if it is concentrated, then that pain and the pricking sensation spread out around that centre.

⁶⁷ *Airs, Waters, Places*. See commentary.

⁶⁸ See commentary.

⁶⁹ See commentary.

- ١٠: ٥ عرقان في المأقيين وفصدهما نافع من بقية الرمذ والدمعة والعشاوة.⁷⁰
- ١١: ٥ عرق في طرف الأنف وفصده نافع من الكلف واستحالة اللون والحزاز والبثور والقروح |9a| في الأنف والشفة واحتقان الدم فيهما⁷¹ وهي⁷² النواسير⁷³ والشقاق⁷⁴ فيهما.
- ١٢: ٥ عرقان في باطن اللسان وفصدهما نافع من تورم اللسان والخوانيق الدموية.
- ١٣: ٥ عرقان في باطن الذقن وهما الساريان⁷⁵ من داخل إذا رفع اللسان رأيت واحدا على اليمن وواحدا على الشمال وفصدهما⁷⁶ نافع من اللوزتين وهما ورم العضل الذي عن جنبتي المري.
- ١٤: ٥ عرقان يُعرفان بالودجين وموضعهما العنق وفصدهما نافع من بحة الصوت ووجع الرئة والربو⁷⁷ والجذام في أوله.
- ١٥: ٥ ويليها عرقان متلاصقان للحلقوم ومن قطع أحدهما فقد ذبح المفصود.
- ١٦: ٥ عرقان في العضدين ويُعرفان بلابطين ويوجد كل واحد منهما بين المرفق والإبط من الجانب الأنسي وفصدهما نافع من انصباب الدم إلى القلب ووجع الرئة والصدر والشوصة.
- ١٧: ٥ ستة عروق في الذراعين في كل ذراع منها ثلاثة عروق أحدها⁷⁸ يقال له القيغال وهو اسم يوناني ومعناه الرأس وموضعه الجانب الوحشي وفصده نافع لما فوق اللبة⁷⁹ والرأس والوجه لأنها مرتقية إليه.⁸⁰
- ١٨: ٥ الباسليق وهو عرق البطن وهو مشتق من الرياسة وموضعه الجانب الأنسي وفصده نافع لما أسفل اللبة⁸¹ لأنّ مبلغه هنالك ثم ينصب إلى الرجلين.⁸²

70 العشاوة : العشاوة

71 فيهما : فيها

72 وهي : وفي

73 النواسير : البواسير

+O 74

75 الساريان : الساريين

76 وفصدهما : وفصده

+O 77

78 أحدها : أحدهما

79 اللبة : اللثة

80 لأنها مرتقية إليه : لأنه مرتقي إليها

81 اللبة : اللية

82 رجلين : رحلين

5:10 Two veins in the canthi: phlebotomising them is beneficial for remains of ophthalmia, rhyas, and nyctalopia.

5:11 One vein in the tip of the nose: phlebotomising it is beneficial for freckles, discoloration, dandruff, pustules and ulcers [9a] in the nose and the lips, and congestion of blood, i.e., polyps and fissures, in them.

5:12 Two veins inside the tongue: phlebotomising the two is beneficial for swelling of the tongue and sanguine diphtheria.

5:13 Two veins inside the chin, and the two begin from [the] inside – if the tongue is lifted, you see one on the right and one on the left: phlebotomising the two is beneficial for the tonsils, that are a swelling of the muscle on the two sides of the oesophagus.

5:14 Two veins that are known as jugular veins, and they both are located in the neck: phlebotomising the two is beneficial for hoarseness of voice, lung pain, asthma, and leprosy in its beginning.

5:15 They are followed by two veins that are connected to the throat, and whoever cuts one of the two, slaughters the phlebotomised.

5:16 Two veins in the upper arms that are known as axillary veins, both of them are located between the elbow and the armpit on the inner side: phlebotomising them is beneficial for the blood flowing to the heart, pain in lungs and chest, and pleuritis.

5:17 Six veins in the forearms, three in each forearm, one of them is called cephalic vein, which is a Greek name and its meaning is ‘head’, and it is located on the outer side. Phlebotomising it is beneficial for what is above the jugular fossa, the head, and the face, because they ascend to it.

5:18 The basilic vein, i.e., *vena basilica*, derived from *riyāsa*,⁸³ and it is located on the inner side. Phlebotomising it is beneficial for what is below the jugular fossa, because its outmost scope is there, and then it flows towards the legs.

⁸³ See commentary.

- ١٩: ٥ الأكل وهو شعبة من الباسليق وشعبة من القيغال يلتقيان في موضع واحد في الوسط بينهما ويتحدان ويسمى التقاؤهما أكحلا وفصده نافع من الأمراض التي تكون في جملة البدن لأنه مؤلف من القيغال والباسليق فمن فصده مكانه فقد فصدتهما .
- ٢٠: ٥ ومتى كانت العلة في الرأس فافصد القيغال لأنه خصيص بها إلا إن يكون رقيقا فاعدل عنه إلى ما ينوب عنه |9b| كالأكل بعد أن يكون أشد امتلاء منه .
- ٢١: ٥ وبمثل هذا فقس في سائر العروق .
- ٢٢: ٥ ولا تفصد ضيقا أبدا إلا إذا أردت جذب المواد .
- ٢٣: ٥ ولتعلم أن فصد العرق الخصاص بينه وبين فصد العرق غير الخصاص فرق كثير .
- ٢٤: ٥ عرقان في موضع المعصمين في الذراعين يُعرفان بحبل الذراع وهما من الباسليق ويقومان في الفصد مقامه وشعبة من الباسليق تصير بين البنصر والوسطى وفصده نافع من أوجاع القلب والكبد والطحال والرئة .
- ٢٥: ٥ وأخرى تصير بين الخنصر والبنصر وتُعرف بالأسيلم اشتقاقا من السلامة لأنها نابت عن الشريان وفصدها نافع من وجع الصدر والكبد والطحال والرئة .
- ٢٦: ٥ عرقان في مابض الركبتين في باطنيهما⁸⁴ ويوجد أن أبدا أغلظ وأملا من سائر العروق التي تقاربها وفصدهما نافع بإذن الله من القروح والبثور التي تطول مدتها في الساقين ومن الدوالي ويرد⁸⁵ الطمث .
- ٢٧: ٥ عرقان يُعرفان بعرقى النَّسَا وتوجدان في ظاهر الكعبين من الجانب الوحشي وفصدهما نافع من الوجع الشديد الذي يعرض من لدن الورك وظاهر الساق إلى آخر القدم وربما لم يبلغ إلى القدم .

⁸⁴ في باطنيهما corrected in the margin في باطنيهما

⁸⁵ ويرد: وترد

5:19 The median cubital vein, it is a branch of the basilic vein and a branch of the cephalic vein which come together in one place in the middle between the two and unite, and where they come together is called median cubital vein. Phlebotomising it is beneficial for illnesses that are in the whole body because it consists of the cephalic vein and the basilic vein, and whoever has phlebotomised it in this place, indeed has phlebotomised the two [veins].

5:20 Whenever the illness is in the head, phlebotomise the cephalic vein, since it is especially intended for it, unless it is thin, for then turn away from it toward something that can replace it, |9b| such as the median cubital vein, because it is thicker⁸⁶ than the other.

5:21 According to this example, open the rest of the veins.

5:22 Do not ever phlebotomise a narrow one unless you want to draw matters.

5:23 You should know that there is a big difference between phlebotomising a specifically intended vein and a vein that is not specifically intended.

5:24 Two veins in the place of the wrists in the arms, known as *vena cephalica pollicis*, that come from the basilic vein and serve in phlebotomy instead of it. A branch of the basilic vein runs between the ring finger and the middle finger: phlebotomising it is beneficial for pain in the heart, liver, spleen, and lungs.

5:25 Another [branch] comes towards the little finger and the ring finger, it is known as *vena salvatella*, deriving from *salāma*,⁸⁷ since it substitutes the artery: phlebotomising it is beneficial for pain in the chest, liver, spleen, and lung.

5:26 Two veins in the popliteal fossae,⁸⁸ they should always be thicker and fuller than the other veins that are near them: phlebotomising them is beneficial – with God’s permission – for chronic ulcers and pustules in the legs, and for varicose veins, and to urge on the menses.

5:27 Two veins that are known as the sciatic veins⁸⁹, that are found on the outer one of the two malleoli, on the outside: phlebotomising them is beneficial for the strong pain that occurs from the hip and the external part of the leg, all the way to the tip of the foot. Sometimes the pain does not reach the foot.

⁸⁶ Lit. ‘fuller’.

⁸⁷ See commentary.

⁸⁸ <inside the two> in the margin.

⁸⁹ See commentary.

٥: ٢٨ عرقان يُعرفان بالصافنين ويوجدان على الكعبين من الجانب الأنسي وفصدهما نافع من القروح والبثور وحكة الأنتيين ويرد⁹⁰ الطمث.

٥: ٢٩ وذلك اثنان وأربعون عرقا سوى شعب الباسليق وقد توجد عروق تُعرف بالمدنية وتولدها من الأطعمة والأشربة والمياه الردية وخصوصية ذلك البلد وعلاجها خارج عن غرض كتابنا هذا.

⁹⁰ ويرد: وترد

5:28 Two veins known as the saphenous veins⁹¹, and they are on the inner one of the two malleoli: phlebotomising them is beneficial for ulcers and pimples, the itching of testicles, and to urge on the menses.

5:29 That is forty-two veins, excluding the branches of the basilic vein. There are veins that are known as *al-madaniyya*,⁹² that are generated from foods, drinks and bad waters, as well as the character of that country – their treatment is outside the intention of this book of ours.

⁹¹ I.e., the great saphenous veins. See commentary.

⁹² Lit. ‘Medinean veins’, i.e., Guinea worms. See commentary.

الباب السادس

- ٦: ١ الباب السادس نذكر فيه كيفية فصد العروق وما يلحق ذلك من الخطأ ليحترس منه .
- ٦: ٢ إنه لما كانت العروق |10a| المفصودة ضوارب وغير ضوارب نحو ما ذكرنا وكان في فصد الضوارب خطر بسبب غلظ جرمها وعسر انقطاع دمها واندمالها .
- ٦: ٣ وهي مركبة من طبقتين إلا العرق الذي يسقي الرئة فإنه وحده مركب من طبقة واحدة وتخن الطبقة الداخلة خمسة أمثال ثخن الطبقة الخارجة .
- ٦: ٤ وزعم جالينوس أنه ما أقدم على فصدها إلا لسبب وجع كان يجده قد بما في الموضع الذي يتصل فيه الكبد بالحجاب وكان يومئذ غلاماً فأري في نومه أن يفصد العرق الضارب الذي بين السبابة والإبهام وأن يترك الدم حتى ينقطع ففعل ما أري فسكن عنه الوجع على المكان⁹³ وخرج من الدم أقل من رطل .
- ٦: ٥ وأفضل فصدها إن تُبتر بنصفين على نصف دائرة فينقبض أحد الجانبين إلى منشائه والآخر إلى الجانب الآخر .
- ٦: ٦ وقد يعرض هذا بعينه للعرق غير الضارب إلا أنه في العرق الضارب إحدى وأولى⁹⁴ .
- ٦: ٧ وأما العرق غير الضارب فأول ما يجب عليك أن تملأه ثم تقيده بعصابة بالقرب منه وادلك الموضع بالدهن فإن خفي فحلّه وعلم على الموضع أعني موضع الفصد بلا تقييد واتركه قليلاً ثم شدّه وادلكه .
- ٦: ٨ فإن خفي فشدّ جدا وعلّق من اليد شيئاً ثقيلاً واتركه ساعة .
- ٦: ٩ فإن خفي ولم يظهر فافصده في موضع العلامة .

+o⁹³

+o⁹⁴

The Sixth Chapter

6:1 The sixth chapter in which we mention the method of phlebotomy, and the mistake this may entail in order to beware of it.

6:2 The phlebotomised veins [10a] are pulsatile and non-pulsatile, as we have mentioned, and there is a danger in phlebotomising the pulsatile [veins] due to the coarseness of their substance, the difficulty of stanching the blood flow, and ensuring recovery.

6:3 They are composed of two tunics, apart from the vein that nourishes⁹⁵ the lung, for it alone is composed of one tunic, and the thickness of the inner tunic is five times the thickness of the outer tunic.

6:4 Galen declared that he did not undertake phlebotomising them unless for the reason of pain that he had once felt in the area where the liver connects to the diaphragm. At that time he was a boy, and it was shown to him in his sleep that he should phlebotomise the pulsatile vein that is between the index finger and the thumb, and let the blood [flow] until it[s flow] ceases. He did as was shown to him [in his dream], and the pain ceased immediately, with less than a *ratl* of blood flowing out.

6:5 The best way of phlebotomising them is to cut them into two halves, as a half circle, for then one of the two sides will shrink to its place of origin and the other to the other side.

6:6 This very thing may happen to the non-pulsatile vein, but it primarily occurs in the pulsatile vein.

6:7 As to the non-pulsatile vein, the first thing that you need [to do] is to have it filled [with blood], then bind it with a bandage near it, and rub the spot with oil. And if it [i.e., the vein] disappears, untie it and put a mark on the spot – I mean the spot of the phlebotomy – without binding, and leave it for a moment. Exert pressure on it and rub it.

6:8 If it [i.e., the vein] disappears [again], put severe pressure to it and fasten something heavy to the hand and leave it for a while.

6:9 If it remains unseen and does not become visible, then phlebotomise at the site of the mark.

⁹⁵ Lit. ‘irrigates’.

- ٦:١٠ وخبرني بعض من كنت أتعلم عنده الفصد أنه عسر عليه إخراج عرق امرأة فنهرها وضجرها ولكمها فبرزت عروقها ففصدها للوقت واعتذر إليها وأخبرها بحيلته .
- ٦:١١ ومتى دلكت موضعا ولم تره ممتلئا فاعلم أن ليس هناك عرق .
- ٦:١٢ فأما عرق الجبهة [10b] فيُفصد بالخنق بعصاة .
- ٦:١٣ وأما الودجان ففصدهما بالنفخ القليل .
- ٦:١٤ القيصال ينبغي أن ينزل عن العضلة نحو اللحم إلى الموضع اللين ولا تفصده ضيقا فإنه يرم .
- ٦:١٥ وليكن الفصد عند احتراق الدم واسعا لغلظ المادة وعند جذب المادة⁹⁶ ضيقا ليطول الجذب⁹⁷ وعند الكثرة متوسطا لأنه إن كان واسعا خُشي من انصباب الدم بقوة فيحدث في موضع الفصد ورم .
- ٦:١٦ ومتى تعذر خروج الدم فإن عكر الزيت إذا جعل عليه أكثر من صفائه .
- ٦:١٧ الأكل يتفقد فإن كان العصب يمنة أو يسرة فُصد بشفرة⁹⁸ المبضع خلاف جهة العصب . وإن كان بين عصبين فُصد طولا وتُرك التعميق لأنه ربما بتر معه غير محسوس فيعقب خدرا .
- ٦:١٨ الباسليق ينبغي أن يتفقد الشريان الذي تحته قبل التقييد ويُعلم عليه وهو أبدا بنفسجي اللون ثم يُشد ويُنظر موضع العلامة فيتضح عنه .
- ٦:١٩ والباسليق أبدا يفارق الشريان أسفل المرفق ويعرض فأنزل الفصد أسفل ما أمكن وجنب فصده جهدك مالم يكن ممتلئا . وقد يُشرَح الباسليق إذا لم يظهر ويُعلَق بسنارة ويُفصد أو يُفصد بعض شعبه كالإبطي ونحوه . ومتى شددت الرباط ورأيتَه ينتفخ ويعلو⁹⁹ فتوق فصده فإنه شريان ويكون فصده بمبضع لين قصير الشفرة¹⁰⁰ .

⁹⁶ بيان جذب in the margin

⁹⁷ ليطول الجذب أصل in the margin

⁹⁸ بشفرة: بشعرة

⁹⁹ يعلو: يعلوا

¹⁰⁰ الشفرة: الشعرة

6:10 Someone with whom I was studying phlebotomy informed me that it was difficult for him to extract [blood from] the vein of a woman, thus he scolded her, annoyed her, and punched her, causing her veins to emerge, and then phlebotomised her right away, and apologised to her and informed her about his trick.

6:11 When you have rubbed a spot and do not see it filled, then know that there is no vein.

6:12 As to the frontal vein, [10b] it is phlebotomised by compression with a headband.

6:13 As to the two jugular veins, they are phlebotomised with a slight inflation.

6:14 The cephalic vein has to go down from the muscle towards the flesh, to the soft spot, and do not phlebotomise it when narrow, for it will swell.

6:15 At the time of combustion of blood, phlebotomy should be conducted to a wide [vein] for the coarseness of the matter, and to a narrow one when drawing matter <in order to lengthen the drawing>,¹⁰¹ and to an average one when there is a lot, since had it been wide, one would fear that the blood flows out copiously, thus a swelling at the site of phlebotomy would occur.

6:16 When blood flows with difficulty, it is better¹⁰² to apply the sediment of oil on the spot instead of clear oil.

6:17 [When] the median cubital vein is examined, and the nerve is on the right or on the left, it is phlebotomised with the blade of the scalpel, on the opposite side of the nerve. And if it is between two nerves, it is phlebotomised lengthwise, and not deeply, because one might cut with it [a nerve that is] not noticeable, so that numbness follows.

6:18 The basilic vein: one has to examine the artery that is below it before binding, and mark it, and it is always purple in colour. Then it is tightened, and one keeps in mind the place of the mark, and then takes it away.

6:19 The basilic vein always separates from the artery below the elbow and becomes visible, thus conduct phlebotomy as low as possible, but by all means avoid phlebotomising it unless it is full. And if not visible, the basilic vein may be cut open being lifted with a crochet needle and phlebotomised, or one phlebotomises one of its branches, such as the axillary vein, and the like. Whenever you tighten the ligature and see it inflate and elevate, be wary of phlebotomising it, for it is an artery, and phlebotomising it is done by a fine, short-bladed scalpel.

¹⁰¹ < in the margin.

¹⁰² Lit. 'more'. See commentary.

٦: ٢٠ فإنه عرق عصبي فإن اتفق في حاله أن ترى الدم مشرقا رقيقا يثب وثبا فاعلم أنه من الشريان وعلاجه سأصفه في موضعه .

٦: ٢١ حبل الذراع وأما حبل الذراع فإنه كثير الزوال فافصده طولا بمبضع لين له شفرة¹⁰³ ويكون غمزك بالمبضع على حسب ما تقدم من صلابة الجلد وصلابة جرم العروق وما عليه من اللحم واعلم أن الجلد الأسود أبدا أصلب والأبيض أرخى ومتى كان العرق رقيقا فافصده تعليقا بمبضع لا شفر¹⁰⁴ له .

٦: ٢٢ وينبغي أن ترسل اليد في وقت الفصد |11a| على حالها الطبيعية وتحرفي وقت الشد إن يزول <الجلد>¹⁰⁵ عن موضعه عند الفصد فينبغي أن يتسع خروج الدم .
٦: ٢٣ وإذا أردت غسل العرق فمد اليد¹⁰⁶ واغسل .

٦: ٢٤ والفصد يكون في الطول أو العرض أو التأريب . أما الطول¹⁰⁷ فإذا¹⁰⁸ كان بين عصبتين . وأما العرض فإذا أريد أن يلتحم سريعا . والتأريب بين هذين وشكله في خروج الدم أحسن الأشكال وليكن المبضع عند الأمن من العصب قائما ومبطوحا عندما يخاف تحته عصب مفروش ومقلوبا عند الحذر من مقابلة العصب لوجه المبضع .

٦: ٢٥ ومما يقلل <وجع> الفصد¹⁰⁹ لين المبضع ورقته . وإن تمتلئ العروق ويكمد الموضع بالماء الحار لا جرم في الشتاء .

٦: ٢٦ واحذر أن لا يمس المبضع دهن ولا ما يحويه .

٦: ٢٧ وأشد العروق التي في الذراعين وجعا حبل الذراع ثم القيصال لمكان العضلة وصلابة الجلد .

٦: ٢٨ فأما الباسليق والأكحل فأقل وجعا لا سيما إن لم يكن فوقهما <لحم> .¹¹⁰

¹⁰³ شفرة : شعرة

¹⁰⁴ شفر : شعرة

¹⁰⁵ الجلد above the line

¹⁰⁶ فمد اليد : فمد ولد / أظنه فمد اليد in the margin

¹⁰⁷ فإذا أريد أن يلتحم سريعا + MS

¹⁰⁸ فإذا : وإذا

¹⁰⁹ الفصد + MS , وجع الفصد أصل in the margin

¹¹⁰ لحم أصل in the margin

6:20 It is a nerval vein, so should you see that the condition of the blood is clear and refined, [and that it is] squirting, then know that it is from an artery, and I will describe its treatment in its place.

6:21 *Vena cephalica pollicis*. As to *vena cephalica pollicis*, it withdraws often. Thus, phlebotomise it lengthwise with a fine scalpel that has a blade, and hold the scalpel in accordance with how hard the skin is, and how hard the body of the veins is, and the flesh above it. Know that black skin is always harder, and white softer. And if the vein is thin, then phlebotomise it by lifting it with a scalpel with no blade.

6:22 At the time of phlebotomy it is necessary to let the hand rest |11a| in its natural state, and to be warm at the time of binding. If the <skin>¹¹¹ withdraws from its place during phlebotomy, the extracted blood volume will necessarily increase.

6:23 If you want to rinse the vein, extend the hand and rinse.

6:24 Phlebotomy is [performed] lengthwise, widthwise, or obliquely. [It is performed] lengthwise if it [i.e., the vein] is between two nerves.¹¹² [It is performed] widthwise when I want it to heal quickly. The oblique method is between these two, and its manner [of the cutting] should be the best for the blood to flow out. The scalpel should be secured from the nerve vertically and horizontally when one fears for a nerve spreading under it, and inverted at the risk of encountering a nerve with the front of the scalpel.

6:25 What reduces the <pain of>¹¹³ phlebotomy is the fineness of the scalpel and its thinness. If the veins [do not?] become full, a hot compress should be applied on the spot, especially in the winter.

6:26 Be careful that no oil or anything that contains it touches the scalpel.

6:27 And the most sensitive veins in terms of pain in the forearms are *vena cephalica pollicis*, then the cephalic vein due to the site of the muscle and the hardness of the skin.

6:28 As to the basilic vein and the median cubital vein, [phlebotomising them is] less painful, particularly if there is no <flesh>¹¹⁴ above the two.

¹¹¹ ◇ above the line.

¹¹² See commentary.

¹¹³ ◇ in the margin.

¹¹⁴ ◇ in the margin.

٦: ٢٩ وأما الأسيلم فليوضع الكف في ماء حار حتى ينتفخ ويشد المعصم بعصابة ثم يُفصد ويُعاد في الماء الحار لثلا يجمد الدم .

٦: ٣٠ عرق النسأ توق فصده¹¹⁵ ما أمكن لأن الخطأ فيه يعقب زمانة¹¹⁶ لعصب كثيرة¹¹⁷ والوجه في فصده أن يشد من لدن الورك على الاتصال إلى فوق الكعب بحبل صوف يكون له عرض قليل فإن لم يتبين فيدخل الحمام أو يُدخل الرجل في ماء حار ويعتمد على الرجل العلية بعد أن يجعلها على طوبة أو آجرة ويرفع الصحيحة .

٦: ٣١ وإن لم يظهر فُصد بدله بعض الشعب التي في ظاهر القدم مما يلي الجانب الوحشي وأجودها التي بين الخنصر والبنصر .

٦: ٣٢ ولتعلم أن ما في مابض الركبة عرقين أحدهما عرق النساء والآخر الصافن وإن فُصد هذا [11b] العرق على الكعب أو بعض شعبه التي ذكرنا كان أفضل من فصد أصله كثيرا جدا .

٦: ٣٣ وهكذا كلما بَعُدَ الفصد من موضع العلة في الأمراض المزمنة كان أفضل من فصد أصله كثيرا جدا .

٦: ٣٤ وبعد أن يكون المرض لا يبدو للبصر مثل الأورام فإنَّ إخراج الدم حينئذ¹¹⁸ من الموضع نفسه أفضل كما ذكرنا وعلة ذلك طول الجذب فإنَّ الطبيعة حينئذ تتهيأ لدفع ردي الدم في طول المسافة بعد أن يكون الفصد بالعروق المتصلة بموضع العلة .

٦: ٣٥ وهذا يجري في سائر الأمراض مثل إن فصد الأسيلم لوجع الطحال أفضل من فصد الباسليق على أن هذين العرقين بينهما وبين الطحال اشتراك إلا أن الأسيلم أبعد فصدته أفضل للعلة التي ذكرنا .

٦: ٣٦ وأما الصافن وعروق مابض الركبة فشد دونهما بعصابة كما تشد اليد وتعتمد¹¹⁹ بالرجل العلية على آجرة وتفصدهما .¹²⁰

¹¹⁵ فصدته : فصدها corrected in the margin

¹¹⁶ لا مجاور possibly deleted in the MS

¹¹⁷ hidden below the line

¹¹⁸ حينئذ : حينئذ

¹¹⁹ +o

¹²⁰ +o

6:29 As to *vena salvatella*, the hand should be put in hot water until it swells, and the wrist is tightened with a bandage, then it should be phlebotomised, and put once again in the hot water so that the blood does not coagulate.

6:30 [As for] the sciatic vein, be as wary of phlebotomising it as possible, because a mistake in [phlebotomising] it is followed by chronic damage to many nerves. The method of phlebotomising it is to bind from somewhere below the hip to above the malleolus with a woollen rope that is not very broad. And if it is not clearly visible, he should enter the bath, or put his foot in hot water, and stand on the ailing foot after putting it on baked bricks or a tile, whereas the healthy one is lifted.

6:31 If [even then] it does not become visible, phlebotomise one of the branches in the external part of the foot, close to the outer side of the leg. The best one of those is the one that is between the pinkie toe and the ring toe.

6:32 You should know that there are two veins in the popliteal fossa, one of the two is the sciatic vein, and the other the saphenous vein, and should this vein be phlebotomised [11b] on the malleolus, or one of its branches that we have mentioned, it is much better than phlebotomising its origin.

6:33 Thus, the further away phlebotomy is [performed] from the site of the illness in the case of chronic illnesses, it is much better than phlebotomising its origin.

6:34 When the illness is not visible to the eye, as [in the case of] swellings, evacuation of blood at that time from the site itself is better, as we have mentioned. The reason for that is the length of the drawing [of the blood]. For at that time, after phlebotomy, Nature prepares to expel the bad blood all the way, through the veins that are connected to the site of the illness.

6:35 This applies to all the other illnesses. For instance, if the *vena salvatella* is phlebotomised for the pain of the spleen, it is better than phlebotomising the basilic vein, because there is a connection between these two veins and the spleen, except that the *vena salvatella* is further away, and hence, phlebotomising it is better for the reason that we have mentioned.

6:36 As to the saphenous vein and the veins in the popliteal fossa, tighten below them with a bandage, just as the hand is tightened, while the affected leg is leaning on a tile, and phlebotomise the two.

الباب السابع

- ١: ٧ الباب السابع في جذب المواد .
- ٢: ٧ إنه إذا كانت المواد في أوائل الأمراض الدموية منصبةً وعند منتهاها واقفة وجب أن تختلف المواضع المفصودة بحسب ذلك .
- ٣: ٧ مثال ذلك أن من عرضت له شوصة دموية في الجانب الأيمن فالوجه في علاجه في أول الأمر أن تنظر :
- ٤: ٧ فإن كان الدم في البدن كثيرا فصدت العليل من اليد اليسرى وجعلت التثنية من اليد اليمنى .
- ٥: ٧ وإن كان الدم في البدن قليلا جعلت الفصد من الجانب¹²¹ العليل نفسه وهذا خارج من الفكر والقياس وصححته التجربة .
- ٦: ٧ فإذا جاوز العليل أربعة أيام فصاعدا جعلت فصده في¹²² جميع الأحوال من الجانب العليل نفسه وذلك أن المواد قد صار أكثرها إلى الجانب العليل .
- ٧: ٧ قد امتحنا هذا في جملة من المرضى في المارستانات |12a| وغيرها فوجدناه نافعا سالما ورأينا من خالفه كان سببا لهلاك العليل وشيكا وهذا القياس ينسّق في الأمراض الظاهرة والباطنة والأوجاع التي تكون في البدن من سقطة أو ضربة أو غيرها مما يوجب الفصد .
- ٨: ٧ والذي قاد إلى هذا ودل عليه حكيم الصناعة أبقراط وتابعه عليه جالينوس حيث يقول : وبالجملة فينبغي في الأورام التي هي بعد في الكون أن تجتذب المادة بالضد وأما الأورام المزمنة فمن الأعضاء أنفسها أو ما قُربَ منها . وأفضل ما يكون استفراغها بالعروق المتصلة بها.¹²³
- ٩: ٧ وفصدها¹²⁴ من الجانب المخالف فيه أمران : أحدهما إمالة عن الموضع العليل وهذا باب جلي والثاني تليد المادة ومنع انصبابها .

+o 121

+o 122

+o 123

124 وفصدها : وفصدها

The Seventh Chapter

7:1 The seventh chapter on drawing matters.

7:2 Since the matters in the first stages of the sanguine illnesses are flowing, and in the end of them stagnant, the phlebotomised sites need to vary according to that.

7:3 An example of that is that of someone who is affected by sanguine pleuritis on the right side, then the manner of treating it at first is to observe:

7:4 If there is a lot of blood in the body, you should phlebotomise the patient from the left hand and conduct the epaphairesis¹²⁵ from the right hand.

7:5 If there is a little blood in the body, you conduct the phlebotomy in the affected side itself, and this is beyond rational thinking and analogy, but it has been confirmed by experience.

7:6 If the [duration of the illness of] the patient exceeds four days or more, you should phlebotomise him at all times from the affected side itself, and that is because most of the matters will already have reached the affected side.

7:7 We have examined this with a number of patients in hospitals |12a| and alike, and we found it to be beneficial and safe, and we have seen one who diverged from this and almost caused the death of the patient. This analogy should be drawn in the external and internal illnesses, as well as in pains that occur in the body due to a fall, or a blow, or other things that require phlebotomy.

7:8 The one who led to this [conclusion] and demonstrated it was the master of the art, Hippocrates, whom Galen followed, as he says: “In general, in the case of incipient swellings, it is necessary that the matter is drawn to the opposite side. As to chronic swellings, from the parts themselves or what is close to them.” The best thing is to evacuate them through the veins that are connected with them.

7:9 Phlebotomising them from the opposite side includes two things: one of the two is the deflection away from the affected site, which is something that is evident, and the second is the adaptation of the matter and preventing its flow.

¹²⁵ I.e., repeated removal of blood. See commentary.

٧: ١٠ وقد تتفق في جذب المواد اختلافات كثيرة والأصل واحد ونذكر منها ما يليق هذا الموضع ليكن عوننا على ما يُراد منها.

٧: ١١ فمن ذلك أن يكون بإنسان ورم في زنديه أو في معصمه أو ذراعه ويده اليسرى بها وجع أو يعتاده بها ما يتوقع مع ذلك إن فصدت أن تنصب المواد إليها فالوجه في علاجه أن يُفصد الصافن من الرجل اليمنى كي تنجذب المادة على استقامة.

٧: ١٢ وقد يُفصد في مثل هذا من اليد اليسرى إذا كان الورم من الجانب الأيمن عظيما أو كان الوجع قليلا ومن الصافن معا أو يُقدم فصد اليد اليسرى بالصافن فتدبر هذا واعن بالأخطر والأصعب.

٧: ١٣ ومتى اتفق أن تفصد العليل ويلزم العلاج ويبقى من الورم بقية وليس معها وجع وكان ظاهرا فاشطره وعلق عليه العلق.

٧: ١٤ ولا تفعل هذا حتى يجاور المرض ثلاثة أسابيع لأنه حينئذ يدخل في عدد الأمراض المزمنة. ٧: ١٥ ومتى كمد الموضع واخضر فبادر بشرطه لئلا يفسد هو وغيره.

٧: ١٦ ولقد رأيت في جذب المواد وإمالتها عن المواضع العلية منافع جمّة¹²⁶ من ذلك أنه جاءني بالمارستان جارية شديدة السواد حسنة |12b| اللحم وقد تغرقت ثيابها بالدم من رعاها ومنخراها¹²⁷ ينسكبان دما متصلا فعالجتها بالأدوية التي تجعل في الأنف مما يقطع الرعاف على أنها في أكثر الأمر قليلة الغناء. فلما فعلت ذلك ووثقت بقوتها أمرت بفصدها من الجانبين القيفالين في وقت واحد فما جرى من دمها إلا نحو رطل ونصف حتى انقطع الدم وكان عندي الذي جرى من دمها مع فصدها قدر سبعة أرطال وفوق ذلك.

¹²⁶ +o

¹²⁷ ما written above the line, repeated in the margin

7:10 Many disagreements concerning drawing matters may happen, but the origin is one. We will mention what seems worthy considering this topic – may this help to achieve its goal.

7:11 For instance, if a person has a swelling in his antebrachiums, or in his wrist, or his forearm, and there is pain in his left hand, or he is accustomed to this, what might be expected in this case is that if you were to phlebotomise, the matters would flow into them. In that case the manner of treating it is to phlebotomise the saphenous vein in the right leg, so that the matter is drawn correctly.

7:12 One may phlebotomise according to this example from the left hand if the swelling on the right side is large, or if there is just a little pain, and from the saphenous vein at the same time, or one may phlebotomise the left hand through the saphenous vein. Thus, you should consider this, and see it as the most dangerous and the most difficult [thing].

7:13 When it happens that you phlebotomise the patient and treatment is required, and there is a remain of the swelling with no pain, and it is visible, then scarify it and attach a leech to it.

7:14 Do not do this until the [duration of the] illness is close to three weeks, because at that time it is included in the number of chronic illnesses.

7:15 When the site becomes discoloured and turns green, then scarify it promptly, so that it or anything else does not putrefy.

7:16 Indeed, I have seen plentiful benefits in drawing matters and their deflection from the affected sites. For instance, a young, deep black¹²⁸ and nicely plump slave girl came to me in the hospital [12b] and her clothing was soaked with blood from her epistaxis, and blood was pouring down from her nostrils continuously. I treated her with the drugs that are put in the nose, causing the epistaxis to cease, even though they are in most cases of little worth. And when I did that and I was confident in her strength, I ordered to phlebotomise her from both sides of the cephalic vein at the same time. When around a *ratl* and a half of her blood had flown [from the nose], the bleeding ceased. The amount of blood that flowed from her blood through phlebotomising was seven *ratls* or more.

¹²⁸ I.e., very dark.

الباب الثامن

- ١: ٨ الباب الثامن نذكر فيه الأوقات التي يصلح فيها خروج الدم والاحتباس من خروجه .
- ٢: ٨ أفضل¹²⁹ الأوقات لخروج الدم وقت الربيع كما ذكرنا ومن الربيع اليوم المعتدل الحر والبرد ومن اليوم الساعة الثانية أو الثالثة من الساعات المستوية وقد يختلف هذا بحسب برد المزاج وحده .
- ٣: ٨ فإن كان حار المزاج أو يسرع إليه الجوع فالبيادر بفسده في أول ساعة ومن كان بارد المزاج فليؤخر حتى يحما النهار قليلا .
- ٤: ٨ وسنذكر ما يجب أن ينال من الغذاء شيئا قليلا قبل الفصد في موضعه وليستعمل قبل استحكام الهضم وخروج الثفل واعتدال الطبع لأن كثيرا من تلين طبيعته بعد فصدته بسبب أن الحرارة الغريزية تضعف لخروج الدم وبعد أن يستحم من كان قليل التعب غليظ الدم .
- ٥: ٨ ويتركه من تعب وتحرك قبل وقت الفصد أو لم يكن¹³⁰ دمه مؤاتيا للخروج ومهتاجا .
- ٦: ٨ ومن كان مخلطا في تدبيره فالفصد أولى به من الإسهال والإسهال أولى بمن كان متحفظا .
- ٧: ٨ ومن فصدته¹³¹ فلا تشد له الرباط فإنه يجلب الورم ولا تكثر فوقه الخرق .
- ٨: ٨ ويحترس من الجماع إلا عند الشبق الشديد فإنه أفضل شيء مجتمع وخروجه أفضل من تركه ومن الأغذية الرديئة قبله وبعده بيومين .
- ٩: ٨ ويحترس من الفصد من تعتاده منه الأمراض الباردة أو هو ضعيف العصب أو |13a|¹³² يغتم أو يسهر ويعنى بالعلوم الدقيقة أو يجامع كثيرا ومن قرب عهده بالسفر أو الفصد أو التعب العنيف والمعتقل الطبيعة والقريب العهد بانطلاقها أو بالقيء أو سخن بدنه أو برد بأكثر من المعتاد أو المتخوم أو السكران أو الممتلىء من الغذاء أو الجائع أو من فسد هضمه أو الإيض¹³³ أو من كانت في بدنه أخلاط فجة .

¹²⁹ أفضل: لفضل

¹³⁰ لم يكن: كان

¹³¹ فصدته: فصدت

¹³² أو MS +

¹³³ uncertain reading

The Eighth Chapter

8:1 The eighth chapter in which we mention the times that are suitable for extracting blood, and the cautiousness in its extraction.

8:2 The best time for extracting blood is the spring, as we have mentioned, and in the spring a day moderate in heat and cold, and of the day the second or the third hour of the average hours, and this may vary solely according to the coldness of disposition.

8:3 If he [the patient] is of hot disposition, or quickly becomes hungry, one should hurry up to phlebotomise him in the first hour. And for whoever is of cold disposition, it may be postponed until the day becomes slightly warmer.

8:4 We will mention the food that one should eat a small quantity of before phlebotomy in its proper place, and what one should use prior to strengthening the digestion, outflow of residues, and balancing the disposition. [That is] because in many cases one's stools become soft after phlebotomy, for the innate heat weakens due to the outflow of blood. The same holds good for someone who has been to the bathhouse while he was somewhat tired and had coarse blood.

8:5 One should not perform it [i.e., phlebotomy] to someone who is tired and has been exercising before the time of phlebotomy, or whose blood is [not] suitable for being extracted and in a state of commotion.

8:6 If someone's regimen is irregular, phlebotomy is more appropriate than purgation, and purgation is more appropriate for whoever is cautious.

8:7 If you phlebotomise someone, do not make the ligature too tight, for it brings forth a swelling, and do not apply many cloths on it.

8:8 He should be wary of coitus unless in the case of strong sexual desire [when a surplus of semen] has collected, and getting it out is better than leaving it, as well as of bad food two days before and after it.

8:9 One should be cautious to phlebotomise someone who is accustomed to cold illnesses, or whose nerves are weak, or [13a] who is distressed or sleepless, or takes an interest in sciences that require concentration, has a lot of coitus, or has recently travelled or been phlebotomised, or who is very tired, who suffers from constipation and has recently been purged or vomited, or whose body has become hotter or colder than customary, or who suffers from indigestion, is drunk, or full of food, or hungry, or whose digestion or [?] is corrupted, or in whose body there are raw humours.

- ٨: ١٠ وبالجملة كل ما يهد القوة ويحلها أو تحيرها إلا أن يفجأ أو يتوقع أمراً عظيماً مما هو حاضر كالسكتة أو الخناق أو الخفقان أو السقطة العظيمة .
- ٨: ١١ فإن مثل هذه الأمراض وشبهها قد يُفصد لها فيها في أي الأوقات أمكن من ليل أو نهار ويجب أن تقيس أبداً بين ما طراً وسلف وتعنى بالأخطر والأصعب ولا تغفل الآخر ما أمكن .
- ٨: ١٢ ومتى توهمت بعليل مدنف أو منهوك البدن أو مزمن العلة إنه يحتاج إلى إخراج الدم فافتح العرق فإن رأيت الدم أسود قليل الزبد فأخرج ما هممت بإخراجه فإن كان رقيقاً أو أصفر أو رمانياً فشدّه على المكان فإنّ في خروجه خطراً .
- ٨: ١٣ ولا تمتنع من فصد عليل قد مر مرضه أيام كما قد ظن ذلك أقوام إذا كانت معك الدلائل القوية كما أنك تمتنع من فصدّه إذا لم تكن واثقاً بقوته نعم وإن كان في أول يوم .
- ٨: ١٤ وقد فصد أبقراط مريضاً في اليوم الثامن من مرضه .
- ٨: ١٥ وجالينوس يقول ولا تمتنع من الفصد في اليوم العشرين مثلاً مع صحة القوة وتام الهضم .

8:10 And in general, [one should be cautious in the case of] everything else that weakens the strength, dissolves it or bewilders it, unless one gets surprised by, or anticipates a major incident, such as apoplexy, diphtheria, palpitation, or a severe collapse.

8:11 Such illnesses and the like may be treated with phlebotomy, at any time possible, day or night, but you must always take into consideration what has occurred and preceded, and what is the most dangerous and difficult [thing], and do not neglect the other, if possible.

8:12 If you suspect that a patient is emaciated, physically exhausted, or chronically ill, he surely needs the extraction of blood. Thus, open the vein, and if you see the blood black and slightly foamy, then evacuate what you intended to evacuate. And if it is thin or yellow or red,¹³⁴ tie it off immediately, since there is a danger in its extraction.

8:13 Do not abstain from phlebotomising a patient whose illness has gone on for some days, as some people have supposed, when you have strong indications. Likewise, you should abstain from phlebotomising when you are not confident about his strength. Truly [this should be so], even if it were on the first day.

8:14 Hippocrates indeed phlebotomised an ill person on the eighth day of his illness.

8:15 Galen says: “Do not refrain from phlebotomy on the twentieth day, for instance, when the strength is sound and the digestion completed.”

¹³⁴ Lit. ‘the colour of a pomegranate’.

الباب التاسع

٩: ١ الباب التاسع في التثنية .

٩: ٢ من كان الغرض في فصده حفظ صحته فليُخرج له من الدم في الساعة التي ذكرناها وليجعل تثنيته بعد الساعة الرابعة من الساعات المستوية من فصده والأكثر إلى أول الساعة السادسة .

وليكن للقوي أسرع وللضعيف أبطأ |13b| لا جرم لمن يُغشى عليه فإنه يخرج دمه في مرات بعد أن ينال من الغذاء بين الفصد والتثنية .

٩: ٣ ومن كان الغرض فيه جذب المواد إلى ضد الجهة التي مالت إليها فيُجعل تثنيته في اليوم الثاني . فإن بقيت من مرضه بقية وساعدت قوته إخراج الدم أيضا أخرج في اليوم الثالث بعد أن يقوى فيما بين الأيام وعلى حسب كثرة الدفعات تكون قوة جذب الشيء وتكون القوة أوفر وأجم .

٩: ٤ ومتى أردت التثنية فتكتفي أن تشد العصابة وتقبض الكف جدا . فإن لم يخرج الدم لويت الذراع قليلا فإن تعذر خروجه جذبت الدم بالدلك إلى جانب فم العروق فإن لم يخرج الدم أو جمد في فم العرق علق فلا تنقره فإن ذلك ربما أحدث ورما .

٩: ٥ ومتى حدث ورم في موضع الفصد فلا تعرض للتثنية ولتفصد ما فوقه أو ما قرب منه .

٩: ٦ وإن لم تبعث الضرورة إلى التثنية فليجعلها بعد يومين أو ثلاثة .

٩: ٧ وقد رأيت بمدينة السلام من يزيل علق الدم بكاغذة مفتولة وقد يسكب الماء الحار على الموضع فيفتحه .

The Ninth Chapter

9:1 The ninth chapter on epaphairesis.

9:2 Whoever is phlebotomised with the intention of preserving his health, his blood should be extracted at the time that we have mentioned, and the epaphairesis shall be conducted after the fourth hour of the even hours from his phlebotomy, and no later than the beginning of the sixth hour. Let it be faster for the strong and slower for the weak, [13b] especially for the ones who lose consciousness. And his blood should be extracted in several sessions after taking in food between the phlebotomy and the epaphairesis.

9:3 For a person whose matters one intends to redirect contrary to their usual direction, the epaphairesis should be conducted on the second day. In case a residue of his illness remains and his strength also supports the extraction of blood, extract on the third day after he has gained some strength in the course of the days. And the power of drawing the matter should be in accordance with the number of sessions, it should [always] be more abundant and more plentiful.

9:4 When you want [to conduct] epaphairesis, it is enough that you tighten the band and hold the hand firmly. If no blood flows out, you tilt the forearm a little. And if its extraction is difficult, you draw the blood by rubbing the side of the opening of the veins. If [still] no blood flows out, or a blood clot coagulates at the opening of the vein, do not cut it, since this sometimes provokes a swelling.

9:5 When [such] a swelling occurs at the site of the phlebotomy, do not conduct epaphairesis, but you may phlebotomise what is above or below it.

9:6 And if there is no necessity for epaphairesis, it may be conducted after two or three days.

9:7 In Baghdad,¹³⁵ I have seen someone who removed a blood clot with a tightly twisted paper. One might also pour hot water on the site, thus opening it.

¹³⁵ *Madīnat al-Salām*.

- ٩:٨ وأخبرني من كنت أقرأ عليه أن المأمون افتصد فلما أتى وقت التثنية عسر خروج الدم فأحضر المتطببين فكل أشار بما لم يقبله وحضر المجلس من ضمن خروج الدم بأسهل الوجوه بعد أن يزول من حضر فلما زالوا امتص العرق فأنزل في فمه في الوقت .
- ٩:٩ وليُخرج في التثنية نصف ما يُخرج في الابتداء . ومن منافع التثنية أن الطبيعة تميز ردي الدم من سائر الأعضاء وتدفعه إلى الموضع المفصود لضعفه لما ناله من الجرح وأيضا لأن الطبيعة لا تحتمل إخراج الدم دفعة وإن فعلنا ذلك خفنا خورها .
- ٩:١٠ ومتى خشيت انسداد العروق عند التثنية إما بسبب غلظ الدم أو لأن الضربة |14a| رقيقة فاجعل على الرفاة ملحاً مسحوقاً ملتوتاً بدهن ورد وعصبه .
- ٩:١١ وإن كان جلد المفصود رقيقاً جعلت دهن ورد وحده لئلا يتقرح الموضع .
- ٩:١٢ وليس كل عرق يحتمل التثنية لأن منها عروفا لا تجيب إلى ذلك .
- ٩:١٣ ومن كان سكيراً فليستوثق من شده وتربط لجاما في ذراعه إلى عضده وتتعاهد نومه كي لا ينزف فيدول إلى خطر .

9:8 A person under whom I studied informed me that al-Ma' mūn was phlebotomised, and when the time of epaphairesis arrived, the extraction of blood was difficult. Thus, he brought in the physicians and they all recommended things that he would not accept. Someone who was certain about the easiest way of getting out the blood participated in the council after the others had left, and when they had left, he sucked the vein and made it descend into his mouth immediately.

9:9 When conducting epaphairesis, one should extract half of the amount of blood that was extracted in the beginning. One of the benefits of epaphairesis is that Nature distinguishes the bad blood from the rest of the parts and pushes it towards the phlebotomised site due to its weakness caused by the wound, and also because Nature does not tolerate the extraction of [a lot of] blood in one session. If we were to do that, we would be afraid of its weakness.

9:10 Whenever you fear for an obstruction in the veins when conducting epaphairesis, either because of coarse blood, or because the pulse is |14a| thin, put ground salt mixed with rose oil on a dressing and bind it.

9:11 If the skin of the phlebotomised person is thin, you apply only rose oil so that the site does not become ulcerated.

9:12 And not every vein tolerates epaphairesis, since there are veins that do not react positively to that.

9:13 For whoever is bibulous, the binding should be checked, and you should tie a strap on his forearm up toward his upper arm, he should be checked frequently while he is asleep so that he does not bleed profusely, thus being exposed to danger.

الباب العاشر

- ١٠: ١ الباب العاشر في غذاء المفصود وشربه وتدبيره .
- ١٠: ٢ يكون البيت الذي يفصد فيه معتدل الهواء رفيع ¹³⁶الرك ¹³⁶ مفتوحا إلى الشمال مفروشا بالرياحين والورد وضروب الفواكه .
- ١٠: ٣ وليؤخذ من بعد الفصد السكننجيين السكري أو الجلاب أو شراب الورد وعلى قدر اللذة ¹³⁷البيض النيمبرشت ¹³⁸ وأيضا الخس والهندباء بالخل وقد يكتفي بأحد هذه الأشياء .
- ١٠: ٤ وليكن الغذاء من لحم جدي أو خروف أو فراريج محمّضات نحو السكباچ وحصرمية ورمانية وزيرباجة ويُطعم الإسفيدباج لمن كان بارد المزاج .
- ١٠: ٥ فإن كان به سعال أو نخس فليترك السكباچ ويحل الباقلاء بالسكر ويأكل ¹³⁹ منها .
- ١٠: ٦ وليكن الغذاء في يوم الفصد وغيره متوسطا .
- ١٠: ٧ ومن أحب تناول من الرمان والسفرجل بعد غذائه .
- ١٠: ٨ ومن كان يضعف عند الفصد أو يتوقع عليه الغشي فإنه يطعم قبل فصده من ماء الفروج وحصرمية أو رمانية أو ببلّ له لباب الخبز بماء رمان حامض ¹⁴⁰ويُسقى من شراب الورد ويخرج منه في مرات كما ذكرنا ويُطعم بين كل مرتين ويُسقى من شراب العسل ¹⁴⁰ والميبة فإنهما ينوبان عن النبيذ وسأذكرهما بعد هذا .

136 עליון התקרה Ms. Parma

137 MS +

138 النيمبرشت : النيمبرشت

139 ويأكل : ويوكل

140 < in the margin, both in the margin and the text in the margin, العسل من شراب العسل

The Tenth Chapter

10:1 The tenth chapter on the food, drink, and regimen of the patient who has been bled.

10:2 The house in which phlebotomy is conducted should have moderate air, high ceiling,¹⁴¹ open towards the north, with fragrant herbs, roses, and a variety of fruit spread out in it.

10:3 After the phlebotomy one should take sugared oxymel, julep, or rose syrup, and according to appetite, soft-boiled eggs, and also lettuce and endive in vinegar. One of these things might be sufficient.

10:4 The food should consist of dishes made from kid, sheep, or soured pullets, such as *sikbāğ*, *hişrimiyya*, *rummāniyya*, and *zīrbāğa*. And *isfīdbāğ* should be fed to whoever has a cold disposition.

10:5 If he [the patient] has a cough or a pricking pain, one should leave out the *sikbāğ*, and dissolve fava beans in sugar and eat from it.

10:6 On the day of phlebotomy, as well as otherwise, the food should be moderate.

10:7 Whoever likes, may eat pomegranate and quince after his meal.

10:8 If someone gets weak when being phlebotomised, or can be expected to faint, he should be fed before the phlebotomy with pullet broth and *hişrimiyya* or *rummāniyya*, or one should prepare breadcrumbs in sour pomegranate juice <and give him rose syrup to drink. [His blood] should be extracted in several sessions, as we have mentioned, and he should be fed between every session, and be given melicratum¹⁴² and *mayba* to drink, as they both substitute wine. I will mention the two after this.

¹⁴¹ Uncertain reading, see commentary.

¹⁴² ◇ in the margin.

٩: ١٠ ولأن أسباب الغشي كثيرة فعلاجه مختلف وفعله واحد وهو انحلال القوة الحيوانية ومسكنها القلب وإن شئت أن تقول الغشي سقوط يعرض للقوة بحدة وسرعة وقد زعم قوم أن الغشي يعرض لأسباب¹⁴³ تعوق الدماغ عن إرساله الحس إلى القلب فيلحق بذلك |14b| القلب الغشي . ولأن غرضنا في هذا الكتاب إنما هو في الغشي الذي يحدث عند الفصد وبسببه فإن كانت الروح التي في كبده لطيفة فإنه يخرج منها كثير مع خروج يسير من الدم فيحدث للقلب بذلك الغشي بالمشاركة بينهما . وأما من كانت الروح التي في كبده غليظة فليس يخرج منها مع كثير من الدم إلا اليسير فليس يحدث حينئذ الغشي .

١٠: ١٠ والوجه في علاجه أنه متى وُجد معه غثيان استعمل القيء بالريشة ويُسقى الماء الفاتر بالسكنجبين لأنه يدل على خلط انصب للمعدة وليرش عليه ماء الورد والماء البارد ويصب عليه ويهز ويصاح به وليُدلك فم المعدة والبدن ويُعرك أنفه فإن أفاق .

١١: ١٠ وإلا أشم المسك والغالية وخذ¹⁴⁴ ماء العسل وليعاود الريشة ومتى لم يكن مع الغشي غثيان فهو يُنذر بشر فبادر في علاجه بماء اللحم وماء العسل والميبة وتُشق في الوجه فراريج مشوية وتُقرب من أنفه الأطعمة الذكية نحو المدققات والطباهجات¹⁴⁵ والمطجنات واللقاتن الكثيرة الأفاويه والبزور وينشق المسك وتُمسح الغالية من داخل أنفه ويضمخ منها جسده وخاصة صدره ويصندل قميصه ومخدته ويرش عليه ماء الورد ويضرب له بالأصوات العالية والأبواق والنايات .

١٢: ١٠ ومن عرض له سقوط قوة لكثرة خروج الدم أو لرقة القلب فليُدبر بهذا التدبير خلا الأصوات والأبواق والنايات .

143 لأسباب : الأسباب

144 وخذ : واخذ

145 +o

10:9 As there are many causes to losing consciousness, its treatment varies, yet its effect is one, i.e., the dissolution of the animal faculty, the seat of which is the heart – if you want to say, losing consciousness is a collapse that occurs to the faculty violently and rapidly. And some people have claimed that unconsciousness occurs due to causes¹⁴⁶ that hinder the brain from forwarding sensation to the heart, and therefore|14b| unconsciousness affects the heart. [However,] as our goal in this book is rather the kind of unconsciousness that occurs with phlebotomy and because of it. If the pneuma in the patient’s liver is fine, a lot of it gets extracted with a slight extraction of blood, and therefore unconsciousness occurs to the heart by means of the interaction between the two. But, if the pneuma in the liver of a patient is coarse, it does not get extracted [even] with a lot of blood, except slightly, and at that time unconsciousness does not occur.

10:10 The method of treating it is that when nausea occurs with it, one should induce vomiting by a feather, and give lukewarm water with oxymel to drink, since it indicates that a humour has flowed into the stomach. Rose water and cold water should be sprinkled and poured on him, he should be shaken and shouted at, and one should massage the mouth of the belly and the body, and rub his nose. Thus, he should regain consciousness.

10:11 If this is not effective, make him smell musk and *ġāliyya*, take melicratum and apply the feather again. When no nausea occurs with the unconsciousness, it is an alarming indication of an injury. Hence, hurry to treating the patient with meat broth, melicratum, and *mayba*, grilled pullets should be torn in [front of] the face [of the patient], and delicious foods, such as *mudaqqaqāt*, *ṭabāhiġāt*, *muṭaġġanāt* and *laqāniq* with lots of aromatic substances and spices should be brought near his nose. He should smell musk, and the inside of his nose should be anointed with *ġāliyya*, and his body, especially his chest, should be anointed with it. Sandalwood should be applied on his shirt and pillow, rose water should be sprinkled on him, high sounds [should be produced], horns and flutes should be played for him.

10:12 If someone suffers from a collapse of strength due to the abundance of extraction of blood, or due to the delicateness of the heart, he should be administered with this regimen except for the sounds, horns, and flutes.

¹⁴⁶ See commentary.

١٣: ١٠ صفة شراب العسل: يؤخذ من العسل الصافي رطل فيُصب عليه خمسة أرتال من ماء عذب في قدر جديد ويُطبخ بنار ليننة¹⁴⁷ وتُنزع رغوته فإذا قرب أن يصير في قوام الجلاب يؤخذ من الدارفلفل والزنجبيل والدارصيني وسنبل الطيب ومصطكى وقرنفل |15a| من كل واحد درهم يُسحق جدا ويُشد في خرقة كتان ويُعلّق في القدر ويطبخ حتى يصير في قوام الجلاب وتُمرس فيه الخرقه والشراب حار بعد أن تنزله عن النار ويُترك¹⁴⁸ ويُستعمل.

١٤: ١٠ صفة شراب الميبة: يؤخذ من السفرجل الغض الحامض العذب الكثير الماء ويُقشر خارجه ويُنقى داخله ويُدق في هاوون حجارة ويُعصر من مائه عشرون رطلا ويُترك ويؤخذ من عقيد العنب الدقيق عشرة أرتال فينقع به ثفل السفرجل ثانية بشيء من ماء السفرجل ويُصفى ويضاف المياه الثلاثة في قدر نظيفة¹⁴⁹ جديدة ويُطبخ برفق على نار جمر وتُنزع الرغوة حتى يبقى النصف. ثم يُنزل ويروّق أياما ثلاثة في كل يوم¹⁵⁰ مرارا بثوب صفيق مضاعف. ثم يلقى عليه عسل منزوع الرغوة خمسة أرتال ويُصير في القدر جسد¹⁵¹ زنجبيل ومصطكى وقاقلة كبيرة وصغيرة ودارصيني وقرنفل وزعفران من كل واحد عشرون درهما مدقوقة جريشا مشدودة جدا في خرقة كتان صلبة رقيقة ولتكن معلقة ويُطبخ الجميع ثانية بنار ليننة ويُمرس الأفاويه وقتا بعد وقت حتى يبلغ إلى حد الأشربة ويُصفى ويُفتق فيه ثمن درهم مسكا مسحوقا ويوضع¹⁵² [في] ظرف زجاج وتترك الخرقه معلقة في الظرف أسبوعين ثم تُخرج. وإن شئت تركت الأفاويه ترسب في قعر الزجاجه.

١٥: ١٠ ميبة أخرى لمثل ذلك: يؤخذ من ماء السفرجل والعسل الصافي منزوع الرغوة من كل واحد جزء¹⁵³ وإن شئت جعلت مكان العسل سكر طبرزد لمن كان حار المزاج وخل ثقيف ثلاثة أرباع جزء يُطبخ برفق على جمر وتُنزع¹⁵⁴ رغوته حتى يصير في قوام الأشربة ومن أراد قليل الحموضة جعل الخل على حسب إرادته.

147 ليننة: ليننة

148 ويترك: وتترك ' and written with diacritical points for both $tā'$ and $yā'$

149 نظيفة: نظيفة

+O 150

uncertain reading

152 يوضع: يودع

153 جزء: جزو

154 تنزع: تزع

10:13 The prescription of melicratum: one takes a *raṭl* of clear honey, and pours over it five *raṭls* of sweet water in a new pot. It is cooked on a low fire and skimmed, and as it gets close to the consistency of julep, one takes long pepper, ginger, cinnamon, Indian nard, mastic, and cloves, |15a| one *dirham* of each, one grinds it well, and compresses it in a linen cloth, and suspends it in the pot, and cooks it until it reaches the consistency of julep. The cloth is soaked in the syrup while it is hot once you remove it from the fire. [Then] it is left [to cool], and consumed.

10:14 The prescription of *mayba*: One takes fresh, very juicy sweet-sour quince, peels the outer layer, cleanses the inside, pounds in a stone mortar, and squeezes twenty *raṭls* of juice and leaves it. [Then] one takes grape jelly, ten *raṭls*, the sediment of the quince is infused in it for a second time in some of the quince juice, and it is then filtered, and the three juices are added in a clean, new pot, and boiled gently on embers, skimming it until half of it remains. Then it is removed [from the fire] to be filtered for three days, a few times every day, in a thick, twofold cloth. Then one adds five *raṭls* of skimmed honey, and adds into the pot ginger root, mastic, big and small [varieties of] cardamom, cinnamon, cloves, and saffron, twenty *dirhams* each, ground, crushed, and tied firmly into a hard, thin linen cloth. It [i.e., the linen cloth] should be suspended, and everything is cooked for a second time on a low fire, the spices are soaked time after time until it reaches the state of a syrup and becomes clear. Then one-eighth *dirham* of ground musk is mixed with it, and it is put [in] a receptacle of glass and the cloth is left hanging in the receptacle for two weeks, and then removed. If you want, you [may] leave the spices to sink to the bottom of the receptacle.

10:15 Another [prescription of] *mayba* for the similar [condition]: One takes quince juice and clear, skimmed honey, one part of each – and if you want, you can use crystalline sugar instead of honey for whoever is of hot disposition – and three quarters of very sour vinegar. One cooks it gently on embers and skims it until it reaches the consistency of syrup. If one wants it to be less sour, one should add vinegar according to one's will.

الباب الحادي عشر

- ١١: ١ الباب الحادي عشر |15b| في الأدوية والأغذية المطفئة للدم.
- ١١: ٢ ولأننا كثيرا ما ندعا إلى العليل وبه من خور القوة وسورة المرض ما لا يمكن فصدّه أو لأنه في نفسه خوار أو ليس له عادة بالفصد فلا يجيب إليه .
- ١١: ٣ فقد ذكر جالينوس في كتابه في حيلة البرء أن رجلا من أبناء ستين سنة ورم لسانه في فمه حتى كأنه لا يسعه فأشرت عليه بالفصد فلم يجبني إليه بسبب أنه لم تجر العادة فأسهلته بحب القوقايا بالعشي وأمرته أن يحبس في فمه دواء مبردا إذا تحرك للاستفراغ وكان بالحضرة طبيب لم يساعطني على ذلك فأخذ العليل الحب ولم يعالج العضو نفسه . فأُريَ في نومه أن مشورتي في أخذه الدواء صواب وأنه ينبغي أن يحبس في فمه عصارة الخس فاستعملها فبرئ برأ تاما .
- ١١: ٤ فوجب أن نذكر من الأدوية والأغذية ما ينوب عن الفصد فمن الأشربة المشهورة شراب حماض الأترج وشراب الرمانين وشراب القراسيا وشراب العناب والسكنجيين الساذج الشديد الحموضة أو المتخذ بأصول الهندباء وبزره وشراب الرمانين وماء التمر الهندي وشراب الإجاجص وامتصاص فلوس الخيار شنبر العسلي البراق .
- ١١: ٥ ومن الأغذية ماء الشعير المطبوخ مع العناب مضافا إليه بعد طبخه ماء الرمان المر ولباب الخبز المغسول بالسكر الطبرزدي .
- ١١: ٦ ومن المزورات عدسية وحصرمية وسماقية ورمانية من قرع أو رجلة ومن البقول الخس والهندباء ومن السمك الطري الصغير يصنع منه سكباح ومن الفواكه رمانين وماءهما وسفرجل وكمثرى وتفاح >وخيار وقتاء ودلاع وأهل العراق يسمونه البطيخ المدني وأهل مصر يسمونه البطيخ الدلسي ويولعون بأكله¹⁵⁵ العناب وحده ومنقعا في جلاب ويشمون الصندل وماء الورد وتضمّد أكبادهم بهما ويقلل غذاؤهم وتعديل مجالسهم بالرش والرياحين والجلاب والآس والشاهسبرم ونحوها .

¹⁵⁵ بأكل + MS in the margin, + <

The Eleventh Chapter

11:1 The eleventh chapter |15b| on the drugs and foods that extinguish [the combustion of] blood.

11:2 We are often called to a patient who suffers from fatigue and is very ill, due to which phlebotomy is impossible, or because he himself is weak or not accustomed to phlebotomy, and thus, does not respond to it.

11:3 Galen mentioned in his book, *Method of Medicine*, that the tongue of a sixty-year-old man swelled in his mouth until it could not contain it. So, I advised him to [undertake] phlebotomy, but he did not agree because he was not accustomed [to it]. Thus, I purged him with a *qūqāyā* pill in the evening, and I commanded him to hold a cooling drug in his mouth, if he would undertake evacuation. And a physician who did not support me in this was present, and the patient took the pill, and he did not treat the part itself. And he was shown in his dream that my suggestion about the patient taking the drug was correct, and that he [i.e., the patient] needs to keep lettuce juice in his mouth. Thus, he used it and was completely healed.¹⁵⁶

11:4 It is necessary for us to mention the drugs and foods that substitute phlebotomy. Thus, of the famous syrups: sour citron syrup, syrup of both [types of] pomegranates, cherry syrup, jujube syrup, plain, very sour oxymel, alternatively with the addition of endive roots and its seeds, and syrup of the two pomegranates, tamarind juice, plum syrup, as well as sucking the honey-like, shiny pod of cassia fistula.

11:5 Of foods: barley broth cooked with jujube, after boiling it one should add bitter pomegranate juice and crumbs of washed bread with crystalline sugar.

11:6 Of the *muzawwarāt*: *ʿadasiyya*, *ḥisrimiyya*, *summāqiyya* and *rummāniyya*; gourd or purslane; and of other greens lettuce and endive. Of fresh fish the small ones prepared as *sikbāḡ*, and of fruit both [types of] pomegranates and their juice, quince, pear, apple, <and cucumber, squirting cucumber, melon, that the Iraqis call *al-biṭṭīkh al-madanī*, and that the Egyptians call *al-biṭṭīkh al-dalasī*, and they are very fond of eating>¹⁵⁷ jujube solely and when soaked in julep. They smell sandalwood and rose water, dress their livers by the two, reduce their nourishment, and improve their gatherings by sprinkling fragrant herbs, julep, myrtle, *šāhasbaram* mint and the like.

¹⁵⁶ See commentary.

¹⁵⁷ ◇ in the margin.

١١:٧ فإن كان يفرغ من تبريد مزاج العليل كثير الدم الأشربة الناقصة الحموضة |16a| والحلوة كالجلاب وشراب البنفسج وشراب الورد وشراب العناب والسكر والترنجيبين والسكنجبين البزوري ومن الأغذية سويق الشعير ولباب الخبز المغسول الخشكارمية بالسكر ومن المزورات القطف والخبيزى والإسفناخ والفاكهة الرطبة وحاول إطلاق الطبيعة قبل الأسبوع لا جرم إن كانت طبيعته معتقلة لأن المادة بعد هذا مهينة للخروج.

١١:٨ صفة مطبوخ يطلق الطبيعة ويمنع سورة الدم: تمر هندي أوقيتان إجاص وعناب وسبستان كبار من كل واحد عشر حبات ورد يابس أحمر وورق بنفسج أزرق غير مستعمل وعدس مقشور وبرباريس وبزر سريس وبزر البقلة الحمقاء من كل واحد ثلاثة دراهم كزبرة يابسة درهمان ورق هندباء وورق عنب الثعلب من كل واحد جزء. يغلى بنار لينة حتى يحمر الماء ويغلظ ويؤخذ من¹⁵⁸ صفو الماء نصف رطل ويُمرس فيه أوقية من لب خيارشنبر قصبي منقى من حبه ويُصفى ثانية ويُشرب.

١١:٩ فإن أطلق وإلا¹⁵⁹ اعيد ثلاثة أيام متوالية.

١١:١٠ صفة أخرى تطلق البطن وأقل بردا إهليلج أصفر ستة دراهم¹⁶⁰ زبيب منزوع العجم وتمر هندي من كل واحد أوقية إجاص وعناب وسبستان من كل واحد عشر حبات تغلى بالماء على نار جمر لينة حتى يغلظ الماء قليلا ويصفى ويؤخذ من صفوه نصف رطل ويحل فيه لب خيارشنبر فارسي قصبي أوقية أو أكثر على حسب القوة ويعاد هذا المطبوخ على حسب الحاجة. ١١:١١ ومما يمنع من سورة الدم ماء عنب الثعلب مع خيارشنبر ويمنع من سورة الدم ماء الشعير قد طبخ بعدس مقشور وذلك أنه يطفئ حدة الدم.

١١:١٢ وصفة ماء الشعير: جزآن من شعير ومن العدس المقشور جزء أو تجعل بدله إجاص أو |16b| عناب وإذا طبخ قصب الصعتر بالعناب وشُرب ماءه أرق الدم الغليظ وهذه الخاصية منه عجيبة جدا وهو حار يابس في الدرجة الثانية.

158 من: في

159 [sic]

160 دراهم: درهم

11:7 If one had to evacuate a lot of blood in order to cool the patient's disposition, [then give] sweet syrups with reduced sourness, |16a| such as julep, violet syrup, rose syrup, syrup of jujube and sugar, manna, and spiced oxymel. And regarding food, barley gruel, crumbs of washed full-grain bread with sugar, and of the *muzawwarāt* orach, mallow, and spinach, and fresh fruit. Try to relieve the bowels [of the patient] a week ahead, especially if he suffers from constipation, because after this [regimen] the matter is ready to be extracted.

11:8 A prescription of a decoction that loosens the bowels and prevents the surplus of blood: [one takes] tamarind, two *ūqiyyas*, large plum, jujube and sebesten, ten grains of each; dry, red rose, unused blue violet leaves, peeled lentils, barberry, endive seed, purslane seed, three *dirhams* of each; dry coriander, two *dirhams*; endive leaves and nightshade leaves, a part of each. It is boiled on low fire until the water becomes red and thickens. Thereafter one takes half a *raṭl* of clear water and soaks in it one *ūqiyya* of the pith of cassia fistula that is cleansed from its seed. It is filtered for a second time, and then one drinks it.

11:9 If it loosens the bowels, [fine], but if not, it should be repeated for three consecutive days.

11:10 Another prescription that loosens the stomach and is less cold: [One takes] yellow myrobalan, six *dirhams*; seedless raisins, tamarind, one *ūqiyya* of each; plum, jujube and sebesten, ten grains of each, [this is] boiled in water on low fire on embers until the water thickens a little. Then it is filtered, and one takes from its filtered part half a *raṭl*, and dissolves in it the pith of cassia fistula,¹⁶¹ one *ūqiyya* or more according to the strength. [Consuming] this decoction is repeated according to the need.

11:11 Among what prevents the surplus of blood is nightshade water together with cassia fistula, and [likewise], barley broth cooked with peeled lentils prevents the surplus of blood, for it extinguishes the vehemence of blood.

11:12 The prescription of barley broth: two parts of barley, one part of peeled lentils, or you use instead of it plum or |16b| jujube. If one cooks a sprig of oregano with jujube and drinks the extract, it refines the coarse blood. This is a most wonderful peculiar virtue [of this herb], and it is hot and dry in the second degree.

¹⁶¹ لب خیارشنبیر فارسی قصبی. See commentary.

١٣: ١١ صفة أخرى لمن يتخوف عليه أن يبرد مزاجه: إهليلج أصفر منزوع النوى ستة دراهم تمر هندي أوقية زبيب منزوع العجم أوقية ونصف ورد يابس أحمر وورق بنفسج من كل واحد أربعة دراهم¹⁶² إجاجص وعناب وسبستان¹⁶³ جلالا¹⁶³ من كل واحد عشر حبات رازياخ أخضر قبضة يُغلى بالماء على نار لينة ويُصفى ويؤخذ منه نصف رطل يُمرس فيه لب خيارشنبر وترنجبين من كل واحد ثلاثة أرباع أوقية ثم يصفى مرة ثانية.

١٤: ١١ فإذا جاوز أربعة عشر يوما استعمل هذه الأقراص ببعض هذه الأشربة الموصوفة. صفة قرص يطفى سورة الدم ويصفيه ويقوي المعدة ويفتح سدد الكبد: أخلاطه ورد يابس أحمر عشرة دراهم¹⁶⁴ بزر رجلة بزر هندباء وبرباريس وصمغ عربي وكثيراء بيضاء من كل واحد درهمان صندل أبيض وطباشير من كل واحد درهم ونصف أصل السوس المجرود الأعلى ثلاثة دراهم راوند صيني درهم زعفران نصف درهم فإن كان الحر كثيرا زيد فيه ربع درهم كافورا يُدق ويُعجن بماء ورق عنب الثعلب مغلى مصفى ويقرّص أقراصا من درهم ويجفف في الظل ويؤخذ منه في كل غداة قرص بأوقية من شراب سکنجبین فإن كان في الصدر خشونة أخذ ببعض الأشربة المائلة إلى الحلاوة كشراب القراسيا أو شراب الرمانين إن شاء الله.

١٥: ١١ صفة قرص أقل تبريدا من الأول وفي معناه: ورد أحمر يابس ثمانية دراهم بزر هندباء وبزر برباريس وبزر رجلة وصمغ عربي وكثيراء ونشاء وبزر بطيخ مقشور وسنبل الطيب ومصطكى وترنجبين من كل واحد |17a| درهمين أصل السوس مجرودا أربعة دراهم طباشير درهم راوند صيني درهم ونصف زعفران نصف درهم يحل الترنجبين بالماء ويُجمع مع سائر الأدوية منخولة وتقرّص أقراصا من درهم ونصف وتُجفف في الظل ويؤخذ ببعض الأشربة الموصوفة.

١٦٢ دراهم : درهم
١٦٣ uncertain reading
١٦٤ دراهم : درهم

11:13 Another prescription for whoever one is afraid that his disposition will turn cold: [One takes] yellow myrobalan without kernel, six *dirhams*; tamarind, one *ūqiyya*; seedless raisin, one and a half *ūqiyya*; dry, red rose and violet leaves, four *dirhams* of each; plum, jujube and sebesten [?], ten grains of each; green fennel, a handful. One boils it in water on low fire, filters it, and takes half a *raṭl*, and soaks in it kernels of cassia fistula and manna, three quarters of *ūqiyya*. Thereafter it is filtered a second time.

11:14 And if it exceeds fourteen days, use these pastilles together with one of these prescribed syrups. Prescription of a pastille that extinguishes the vehemence of blood, cleanses it, strengthens the stomach, and opens the obstructions of the liver: its components: dry, red rose, ten *dirhams*; purslane seeds, endive seeds, barberry, gum Arabic, white gum tragacanth, two *dirhams* of each; white sandalwood, chalk, one *dirham* and a half of each; the upper part of peeled liquorice root, three *dirhams*; Chinese rhubarb, one *dirham*; saffron, half a *dirham* – and if it is very hot, one adds a quarter *dirham* of camphor. One pounds it and kneads it in boiled, filtered nightshade juice, forms it into pastilles weighing one *dirham* [each], and lets it dry in the shade. One takes a pastille every morning with one *ūqiyya* of oxymel syrup. If one has roughness in the chest, one takes it with one of the syrups that tend towards sweet, such as cherry syrup or syrup of both [types of] pomegranates, God willing.

11:15 Prescription of a pastille that is less cooling than the first one, yet similar: red, dry rose, eight *dirhams*; endive seeds, barberry seeds, purslane seeds, gum Arabic, gum tragacanth, starch, peeled melon seeds, spikenard, mastic, manna, [17a] two *dirhams* of each; peeled liquorice root, four *dirhams*; bamboo chalk, one *dirham*; Chinese rhubarb, one *dirham* and a half; saffron, half a *dirham*. One dissolves manna in water and puts it with the other drugs [once they have been] sieved, forms them into pastilles of one and a half *dirham* each. They are dried in the shade and taken with one of the prescribed syrups.

الباب الثاني عشر

١٢: ١ الباب الثاني عشر في منفعة فصد العروق وعلامات العلل التي يُفصد لها.

١٢: ٢ قال أبو بكر محمد بن زكرياء الرازي: والآن قد ذكرنا منفعة فصد العروق على التوالي بقول كلي. رأينا أنّ من الأفضل أن نذكر فصد العروق التي يكثر استعمالها في الفصد بقول جزئي ليكون بمراية.

١٢: ٣ وتنبهاً من ذلك أنّ فصد عرق الجبهة¹⁶⁵ ينفع من وجع العين القديم والثقل الكائن في مؤخّر الرأس اللذين معهما حرارة ومن الحمرة التي تعرض في الوجه ويسميها البصريون النخيلة منسوبة إلى لون شجرة تسمى بهذا الاسم. وينفع¹⁶⁶ أيضاً من البشر الحمر في الوجه ومن شقاق الشفة ونواسير¹⁶⁷ الأنف ومن السعفة القديمة ومن الكلف. وهذا العرق إنما يُفصد بعد القيصال وهكذا كل عرق رقيق لا يُفصد إلا بعد عرق كبير.

١٢: ٤ فصد القيصال ينفع من الضربة والسقطة الواقعة في الرأس لا سيما إذا لم يجر دم كثير ومن الصداع الذي معه ثقل البدن والرأس واستدارة عند الحركة والسجود وحمرة الوجه والعينين وكثرة النوم ومن الشقيقة التي معها ضربان الأصداع وامتلاء العروق فيهما مع سخانة واستلذاذ الأشياء الباردة ومن الدم الذي معه حمرة الوجه ودرور العروق والأوداج والعروق التي خلف الأذنين ومن الشرسام الحار وهو ورم يعرض في شبكة الدماغ ويحمرّ معه الوجه والعين ويعظم معه النبض ومن الصداع الذي تمتلئ مع الودجان والوجه وحمرة في وقت الصرع وربما يدر الدم من المنخرين ومن السكتة التي معها حمرة الوجه وكأنه محترق ودرور والأوداج والعروق ومع ذلك غطيظ |17b| بلا نوم¹⁶⁸ ومن الخدر الذي تكون¹⁶⁹ معه حمرة اللون وفوران عند الحركة ومن الزكام والنزلة اللذين معهما حمرة الوجه ودرور العروق ومن البرد الذي معه حمرة العينين وعظمتها ويحوطهما ومن قروح العين المتشققة >العين التي معها وجع وضربان ومن جرب<¹⁷⁰

¹⁶⁵ عرق الجبهة: عرق الجبهة

¹⁶⁶ وينفع: وتنفع

¹⁶⁷ نواسير: بواسير

¹⁶⁸ بلا نوم: بلّ ندم

¹⁶⁹ تكون: يكون

¹⁷⁰ in the margin

The Twelfth Chapter

12:1 The twelfth chapter on the benefit of phlebotomy and the indications of illnesses that are treated with phlebotomy.

12:2 Abū Bakr Muḥammad ibn Zakariyyā' al-Rāzī said: Now we have mentioned the benefit of phlebotomy consecutively in a comprehensive statement. We take the view that it is preferable to mention phlebotomy of the veins that are frequently used in phlebotomy in a partial statement, in order to focus on it.

12:3 In light of that, phlebotomising the frontal vein is beneficial for long-lasting ophthalmalgia and for the heaviness in the back of the head, the two combined with heat, and redness that occurs in the face, and the Basrans call it *al-naḥīla*, attributed to the colour of a tree that is known by this name. It is also beneficial for red pimples in the face; fissures in the lip[s]; polyps in the nose; chronic cradle cap; and freckles. And this vein indeed is phlebotomised after the cephalic vein, and in this manner, every thin vein should be phlebotomised only after a big vein.

12:4 Phlebotomising the cephalic vein is beneficial for a blow or a fall that occurs to the head, especially if there is no profuse bleeding; and for headache combined with heaviness of the body and the head, vertigo while moving and prostrating, redness of face and the eyes, and abundance of sleep; and for migraine combined with throbbing pain in the temples, and overfilling of veins in them combined with heat and finding cold things delicious; and for blood combined with redness of face; and [for] the copious flow [of the blood] of the veins, the jugular veins, and the veins that are behind the ears; and for hot phrenitis, which is a swelling that occurs in the arachnoid mater of the brain, with which the face and the eye[s] turn red and the pulse intensifies; and for headache with which the jugular veins and the face become filled, and redness at the time of epilepsy, and sometimes blood flowing from the nostrils; and for apoplexy combined with redness of face as if it is burned; and for the flow of the jugular veins and [other] veins, combined with snoring |17b| without sleeping; and for numbness combined with redness and agitation when moving; and for rheum and catarrh combined with redness of face and flow of veins; and for coldness combined with redness of the eyes, their largeness and protrusion; and for fissured ulcers in the eyes <the eye combined with pain and throbbing pain, and itching>;¹⁷¹

¹⁷¹ ◇ in the margin.

وغلظ الأجناف ومددهما¹⁷² ومن ريح السبل وسلاق الأجناف المزمّن الذي معه حمرة الأجناف وانتفاخها مع حكة ومن انتشار الأشفار التي تكون مع حمرة ومن وجع الأذن الذي معه حمرة الوجه وثقل الرأس والجبهة عند السجود ومن البثرة في الصماخ التي معه ضربان والتهاب الوجه ومن الرعاف إذا كانت القوة ثابتة ومن وجع السن الذي معه ورم اللثة وحمرة الوجه وانتفاخه¹⁷³ والاسترواح للأشياء الباردة ومن القلاع الأحمر وهو بثور في الغشاء المستطيل المستبطن ومعها حمرة وحرارة الفم ومن سقوط اللهاة الشديدة الحمرة والحرارة ومن ورم اللسان الذي معه حمرة وحرارة ومن الخوانيق التي تكون¹⁷⁴ معها حمرة الوجه والعين وتمدد البدن ومن تنخع الدم الكثير.

١٢: ٥ فصد الباسليق ينفع من ذات الجنب والشوصة وزعم قوم أنهما اسمان لشيء واحد وإن اختلفا فتر بينهما واحد والفرق بينهما قريب والشوصة ورمٌ يحدث في الغشاء الداخل الرابط للأضلاع وقد زعم قوم أنّ هذا ذات الجنب وأنّ الشوصة ما كان من خارج ويتبعها حمى دائمة وسعال وضيق نفس ونخس وإن اتفق في هذا الورم أن ينتهي الوجع إلى الترقوة كان الفصد وكيدا جدا وإن كان الوجع مائلا إلى ناحية الشراسيف كان الإسهال أولى ثم الفصد بعد.

١٢: ٦ وينفع من الربو الذي يحمرّ معه الوجه وتنتفخ الأوداج ومن الخفقان [18a] الذي معه حرارة الصدر وعظم النبض وسرعته ومن ورم المعدة الظاهر الحرارة ومن ورم الكبد الذي معه عطش شديد وحمى لازمة ومن المالنخونيا الذي معها تغير اللون وفساد الهضم وقيء حامض ورياح دائمة نحو الشراسيف ويجب إذا فصدته أن يكون من اليسار وأن تنظر فإن كان الدم أسود وإلا قطعته¹⁷⁵ ومن وجع الطحال إذا كان ورم وحرارة ومن الاستسقاء اللحمي الذي يكون سببه احتباس دم البواسير والحيض أو من سبب آخر من الامتلاء ومن المغص الذي يُستراح معه إلى الأشياء الباردة ومن اختلاف الدم ومن¹⁷⁶ سحج الأمعاء مع صحة القوة ومن الإسهال الذي يكون سببه خلط سوداوي ينصب إلى المعدة والفصد هاهنا يكون من اليسار

MS contains a sign above the word, possibly an emendation. 172

173 حمرة الوجه وانتفاخه : حمرة الوجه وانتفاخه

174 تكون : يكون

175 [sic]

+o 176

coarseness of eyelids and their expansion; and for wind of pannus and chronic ptilosis of the eyelids with which the eyelids are red, inflated and itching; and for *intitār* of the palpebral margin combined with redness; and for earache combined with redness of face and heaviness of the head and the forehead when prostrating; and for pustules in the auditory meatus combined with throbbing pain and inflammation of the face; and for epistaxis when the strength is steady; and for toothache combined with swelling of gums and redness of face, its inflation, and a desire for cold things; and for red aphthae, that is pustules in the lining of the mouth combined with redness and heat of mouth; and for the fall of the uvula that is severely red and hot; and for swelling of the tongue combined with redness and heat; and for diphtheria combined with redness of the face and the eyes, and tension of the body; and for expectorating a lot of blood.

12:5 Phlebotomising the basilic vein is beneficial for pleurisy and pleuritis, and some have claimed that they are two names for one and the same thing, and even if they differ, you shall see them as one, for the difference between the two is minor, as pleuritis is an inflammation that occurs in the inner lining that connects to the ribs, but some have claimed that this is pleurisy, and that pleuritis is what comes from outside, and it is followed by chronic fever, cough, difficulty of breath, and pricking pain. Should it happen in this swelling that the pain ends towards the clavicle, phlebotomy is very certain. But if the pain is inclining towards the false ribs, purgation is more appropriate, thereafter phlebotomy.

12:6 And it is beneficial for asthma in combination with the face turning red and the jugular veins swelling; and for palpitation [18a] combined with heat of the chest, magnitude of pulse and its speed; and for hot swelling of the stomach that is evidently hot; and for swelling of the liver combined with strong thirst and unavoidable fever; and for melancholy in combination with change of complexion, bad digestion, sour vomit, and chronic winds towards the false ribs – and when you phlebotomise it, it has to be from the left [side], and [you have] to observe whether the blood is black, otherwise you end it – and for pain of the spleen if there was a swelling and heat; and for fleshy-dropsy caused by the obstruction of the blood of the haemorrhoids and menstruation, or for another cause of overfilling; and for gripes which is calmed by cold things; and for bloody diarrhoea and for abrasion of the guts combined with soundness of strength; and for the diarrhoea caused by a melancholic humour flowing into the stomach, and phlebotomising here is from the left;

ومن القولنج الذي يعرض من ورم في الأمعاء ويسمى إيلوس ومعناه رب أرحم ويتبعه عطش وقيء مرار وضربان البطن ومن ورم الكلى ويتبعه في ابتدائه حميات على غير نظام وإذا انبطح العليل على بطنه أحس كأنّ ثقيلا مغلقا من بطنه ومن ضعف الكلى الذي معه وجع الصلب وقلة الباه وبول مثل ماء اللحم ومن انفجار الدم من الكلى وهو يجي عقب البول ومن ورم المثانة الذي معه حمى حارة وشدة¹⁷⁷ وجع المثانة ونحسها ومن حرقة البول الذي يسكن معها العليل إلى الأشياء الباردة ومن كثرة الشهوة الباهية التي <لا>¹⁷⁸ تضعف والاحتلام والانتشار الدائم مع حرارة ومن كثرة الطمث الذي يكون مع قوة ومن نواسير¹⁷⁹ الرحم التي يجي منها الدم بأدوار غير أدوار الحيض ومن ورم الرحم الذي يعرض من احتباس الحيض أو عسر الولادة أو الضربة على الرحم ويتبعه حمى¹⁸⁰ ووجع الرأس وعسر النفس ومن أوجاع |18b| البواسير وشقاق المقعدة وورم الأنثيين مع حرارة ومن وجع الظهر الذي معه ضربان وحرارة ومن وجع الورك الذي معه أدنى حرارة فإنّ هذا الموضوع لخوره قلّ ما تتبين فيه حرارة وبالجملة أوجاع المفاصل التي معها حرارة ومن النقرس الذي يتورم¹⁸¹ ومعه حرارة ويعرض خاصة في مفاصل الرجل وكثيرا ما يتحلل هذا الورم ولا يجمع وربما يتحجر ويتفقع وتخرج منه رطوبات أو شبه الجص والآجر ومن الدوالي وهي عروق ملتفة بالساقين وتعرض كثيرا للحمالين والشيوخ وقد تُفصد أيضا هي أنفسها في مواضع شتى ومن عرق النسا الذي معه حرارة في الساق ومن داء الفيل الذي معه حرارة اللمس وكمودة اللون وهذا مرض يعظم معه الساق والقدم أجمع.

١٢:٧ فصد الأكل: فأما الأكل فإنه كما ذكرنا يعمر الجسم. مثال ذلك أنّا نفصده في الحميات الدموية لأنه شامل لسائر البدن ويجب إذا أردت فصده في مثل هذه العلة أنّ تنظر فإنّ كان الدم لم يبدأ أن يعفن فليس إقدامك على ثقة لأنه لا يؤمن إذا عفن أن يخرج النقي منه فيفسد الباقي وعلامة العفن نتن البول ونثوره¹⁸² ونتن العرق لأنه يخاف في هذا الوقت أن يكون المرض في صعوده وسورته فيكون خروج الدم عند ذلك ضارا جدا

177 وشده بيان in the margin

178 لا in the margin

179 نواسير: بواسير

180 repeated below

181 يتورم: يتورم

182 uncertain reading

and for colic that occurs from a swelling in the guts, and is called *ileus*, which means ‘Lord, have mercy’ and is followed by thirst, bitter vomit, and throbbing pain in the stomach; and for the swelling of kidneys that in its beginning is followed by irregular fevers, and if the patient was made to lay down on his stomach, he feels obscure heaviness in his stomach; and for weakness of the kidneys combined with pain of the spinal column, reduced sexual potency, and urine like meat water; and for phleborrhagia from the kidneys that follows the urine; and for swelling of the bladder combined with hot fever, severe pain of the bladder, and pricking pain in it; and for burning urine with which the patient is calmed by cold things; and for the abundance of sexual desire that does <not>¹⁸³ get weaker; and [for] nocturnal emission; and chronic *intišār* with heat; and for heavy menstrual bleeding that occurs with strength; and for polyps in the uterus that bleed in cycles that are not menstrual cycles; and for the swelling of uterus that occurs due to amenorrhea, or difficult birth, or a blow on the uterus that is followed by fever, headache, and difficult breathing; and for pains |18b| of haemorrhoids and fissures in the anus; and swelling of the testicles combined with heat; and for back pain combined with throbbing pain and heat; and for pain in the hip combined with minor heat – for indeed this site due to its weakness rarely becomes warm – and in general arthritis combined with heat; and for swelling gout combined with heat, that appears especially in the joints of a man, and often this swelling dissolves and does not increase, and sometimes it petrifies and bursts, and moisture or [something] similar to gypsum and baked bricks go out from it; and for varicose veins that are intertwined veins in the legs, and this occurs often to carriers and old men, and one may also phlebotomise exactly those veins in diverse spots; and for sciatica combined with heat in the leg; and for elephantiasis combined with heat of touch, and darkening of complexion, and this is a disease with which the whole leg and foot become enormous.

12:7 Phlebotomising the median cubital vein: As to the median cubital vein, it indeed, as we have mentioned, fills the body with life. An example of that is that we phlebotomise it in sanguine fevers, because it pervades the whole body. If you want to phlebotomise it, such as in this illness, you need to observe: even if the blood has not begun to putrefy, you cannot proceed with confidence, since if it putrefies, one cannot be certain that the clean part of it is expelled, thus it putrefies the rest. The symptom of the putrefaction is bad smell of urine, and small particles in it, and the bad smell of sweat. As one is afraid of the illness escalating and getting severe at that time, extracting blood at this stage is very harmful,

¹⁸³ ◇ in the margin.

وقد فصد جالينوس في حمى العفن من دم والمالنخونيا التي يحترق معها الدم في البدن كله وذلك متى نحف البدن واسودّ وتقدم في ذلك تعب وكد ومن الحكمة التي معها بثور حمر وفتورة¹⁸⁴ البدن كأنه قد خرج من حمام ومتى اتفق أن يكون في الجسم مرضان <ما>¹⁸⁵ يوجبان الفصد أحدهما في حد ما يفصد له القيصال والثاني في حد ما يفصد له الباسليق فافصد |19a| الأكحل فإنه ينوب عنهما .

٨: ١٢ فصد الأسيلم نافع من وجع الطحال والربو اللذين معهما حرارة بعد فصد الباسليق ومن المالنخونيا .

٩: ١٢ فصد المأبض والصابن ينفع¹⁸⁶ من احتباس الحيض قبل وقته بيومين ومن قروح الساقين ومن حك الأنثيين ومن الدوالي ومن الصرع الدموي وقد ذكرنا علامته فيما تقدم ومن القولنج الورمي بعد فصد الباسليق .

١٠: ١٢ فصد عرق النَّسَا الذي معه حرارة ينفع من وجعه بعد فصد الباسليق .

uncertain reading¹⁸⁴
in the margin ما¹⁸⁵ مرضان
¹⁸⁶ ينفع: ينفعان

yet Galen phlebotomised in putrid blood fever the corrupted blood; and melancholy in combination with the blood combusting in the whole body, and that is when the body is slender, and has turned black, and it is preceded by fatigue and hard work; and for the itching combined with red pustules and lassitude of the body as if he [i.e., the patient] just got out of the bathhouse. Whenever it happens that there are two illnesses in the body that both require phlebotomy, one of the two at the degree for which the cephalic vein should be phlebotomised, and the other at the degree for which the basilic vein should be phlebotomised, phlebotomise [19a] the median cubital vein, since it substitutes both of them.

12:8 Phlebotomising *vena salvatella* is beneficial for pain in the spleen and asthma, both combined with heat, after phlebotomising the basilic vein; as well as for melancholy.

12:9 Phlebotomising the popliteal fossa and the saphenous vein is beneficial for amenorrhea two days before its time; and for ulcers in the legs; and for itching of the testicles; and for varicose veins; and for sanguine epilepsy, and we already have mentioned its indication previously; and for colic with swelling after phlebotomising the basilic vein.

12:10 Phlebotomising the sciatic vein combined with heat is beneficial for pain in it after phlebotomising the basilic vein.

الباب الثالث عشر

- ١: ١٣ الباب الثالث عشر في علاج الخطاء الذي يقع في الفصد .
- ٢: ١٣ متى اتفق في فصد الباسليق أن ترى الدم مشرقا يثب وثبا فاعلم أنه من الشريان فاستعمل فيه دواء جالينوس الذي يقول فيه إنه أفضل الأدوية لقطع الدم.¹⁸⁷
- ٣: ١٣ وصفته: كندر جزء صبر نصف جزء يُضرب ببياض بيض حتى يصير في ثخن العسل ويُلت بالدواء وبر¹⁸⁸ الأرنب ويلزم الموضع. فإنْ عَدِم جعل مكانه نسج العنكبوت أو قطن لين مدبر وليكن الصبر في الأبدان التي غلب عليها اليبس أكثر ويُشد شدا محكما. بعد ثلاثة أيام فإنْ كان محتبسا تُرك وتُثر من الدواء حواليه ويُعاد الشد وإنْ كان متبرئا قُلِع برفق وجُعِل الإصبع على موضع فتح العرق ويلزم أيضا الدواء على الرسم الأول ويدبر بهذا حتى يُبرأ ويسلم من الفتق الذي يلحق هذا كثيرا.
- ٤: ١٣ آخر لمثل ذلك:¹⁸⁹ صبر وكندر ودم الأخوين أجزاء متساوية تُعجن ببياض البيض ويُشد ويُترك ويُجعل على الرسم المذكور. وإنْ حُمي أو خيف عليه ذلك رُش عليه الوقت بعد الوقت من ماء الورد كي لا يحل.
- ٥: ١٣ آخر لمثل ذلك: رأيت نصرانيا كان من الحذاق بالمارستان أراد فصد |19b| الباسليق فوقعت الضربة بشريانه فاستعمل هذا الدواء فبرئ وهذه صفته: قلقطار محرق وهو الزاج الأصفر وهو متوسط بين الزاجات الثلاثة في الحدة وصفة إحراقه أن يُجعل في كوز فخار ويُطَبَّن رأسه ويُدخل في الفرن ويُستعمل. وهذا القلقطار اليوم يستعمل في المارستانات في مثل هذا.
- ٦: ١٣ آخر قوي: قشور كندر وزاج أخضر ومر وقلقطار وطين مختم وعصارة لحية التيس ومصطكي وأفاقيا من كل واحد جزء يسحق الجميع ويُطلى على الموضع بشيء من بياض البيض وتُثر عليه الأدوية ويلزق عليه شيء من نسج العنكبوت ببياض البيض ويُحكَّم شده ولا يحل ما أمكن وخاصة في الشتاء.

¹⁸⁷ لقطع الدم: في قطع الدم corrected in the margin

¹⁸⁸ omitted و repeated in the margin, additional ووبر

¹⁸⁹ ذلك: ذلك

The Thirteenth Chapter

13:1 The thirteenth chapter on treating the mistake that occurs during phlebotomy.

13:2 Whenever it happens while phlebotomising the basilic vein that you see the blood bright and gushing, then know that it is from an artery, and then, use Galen's remedy of which he says that it is the best remedy for stopping the blood.

13:3 And its prescription: frankincense, one part; aloe, half a part, mixed with egg white until it reaches the consistency of honey, and the drug is compounded with hare's fur, and it is bound on the spot. And if it is unavailable, one uses instead of it cobweb or processed cotton – and there should be more aloe for the bodies that are dominated by dryness – and one tightens it firmly. After three days, if the bleeding has stopped, it is left, and some drug is sprinkled around it, and it [i.e., the bandage] is tied on again. If the wound has healed, it [i.e., the bandage] is removed gently, and a finger is placed on the spot of the opening of the vein, and the remedy should be applied as first illustrated. It should be treated it this way until it has healed and become safe from the rupture that often follows this.

13:4 Another similar [prescription]: aloe, frankincense and dragon's blood, equal parts, kneaded with egg white. One tightens it, leaves it, and applies it according to the mentioned prescription. If he develops fever, or one fears that this might happen to him, one sprinkles on it rose water time after time, but one should not untie it.

13:5 Another similar [prescription]: I saw a Christian man who was one of the skillful ones in the hospital, and he set out to phlebotomise |19b| the basilic vein, but a blow occurred in his artery, so he used this remedy and recovered. And this is its prescription: burned chalcitis, which is the yellow vitriol, that is the medium one among the three vitriols in sharpness, and the prescription of burning it is that one puts it into a ceramic jug, coats its head with clay, inserts it into the oven, and uses it. And this chalcitis is today used in hospitals in a similar manner.

13:6 Another strong one: Peels of frankincense, green vitriol, myrrh, chalcitis, *terra sigillata*, goatsbeard sap, mastic, and acacia gum, one part of each, everything is ground and coated on the spot with some egg white, and the drugs are sprinkled on it. One presses some cobweb with egg white on it, and it is firmly tightened, and one should not untie it, if possible, especially in the winter.

١٣:٧ وإن اتفق بعد فصد الباسليق وبرئه نتوء عليه لين المغمز ويُسمع فيه صفير فاعلم أنه فثق أو نتوء شريان فضمده بأشياء قابضة ليصلب¹⁹⁰ الموضوع وبد من إحراق الشريان ولا يقرب الموضوع شيء حاد لأنه يُتوقع أن ينزف دم الشريان .

١٣:٨ فإن حدث ورم في العضل والعصب واللحم وخشيت أن تنصب إليه المواد فخذ من الخولان والصبر والمر أجزاء متساوية ومن الطين الرومي وماميثا وصندلين ومرتكا من كل واحد نصف جزء ويُدق الجميع ويُنخل ويُعجن بماء الكزبرة ويُلطخ حول فم العرق وتُجعل عليه خرقة خفيفة ويُجعل على فم العرق نفسه قطعة شحم من ألية كبش مفترة على ورقة سلق كي يبقى فم العرق مفتوحا ويجري ما فيه . وهذا الدواء يمنع المواد ويحلل .

١٣:٩ دواء آخر محلل : صفرة بيض مشوية ودهن ورد بقدر الحاجة يُعجن معه ويُلطخ على الموضوع ويلزم بخرقة خفيفة .

١٣:١٠ آخر أكثر منه تحليلا : شحم دجاج ودهن ورد من |20a| كل واحد خمسة مثاقيل شمع أبيض ثلاثة مثاقيل يُذاب الجميع على النار ويُنزل ويُلقى عليه كثيرا ومرداسنج وإسفيداج أجزاء متساوية ويستعمل بقدر الحاجة .

١٣:١١ فإن على الورم وزاد ألزم العليل المزورات والأشربة المطفئة وفصد الأسيلم وإسهال الطبيعة ولا يدخل الحمام كما كان العضو حاميا إن شاء الله .¹⁹¹

¹⁹⁰ ليصلب : ليطلب
¹⁹¹ +o

13:7 Should a protrusion that is soft of touch occur after recovering from phlebotomising the basilic vein, accompanied by a whistling sound, then know that it is a rupture or a protrusion of an artery. Dress it with astringent things in order to induce hardness, and begin with cauterising the artery. Nothing sharp should get near [and touch] the spot since this can be expected to cause a profuse blood flow from the artery.

13:8 If a swelling occurs in the muscle, nerve, and flesh, and you fear that the matters would flow to it, then take some buckthorn, aloe, and myrrh, equal parts; and Roman earth, glaucium, red and white sandalwood,¹⁹² and litharge, half a part of each. All that is pounded, sieved, and kneaded in coriander juice, and it is rubbed around the opening of the vein, and one applies a light cloth on it, and on the opening of the vein itself one puts a piece of fat from a ram's tail on a chard leaf, so that the opening of the vein stays open and what is inside it flows. This remedy prevents the matters and dissolves.

13:9 Another, dissolving drug: the yolk of a roasted egg and rose oil according to the need are kneaded, and it is rubbed on the spot, and made to adhere with a light cloth.

13:10 Another, more dissolving [drug]: chicken fat and rose oil, [20a] five *mitqāls* each; white wax, three *mitqāls*. All that is melted on fire, removed, and one adds to it gum tragacanth, litharge, and ceruse, equal parts, and it is used according to the need.

13:11 If a swelling rises and increases, the patient shall be compelled [to take] *muzawwarāt* and syrups that extinguish [the heat], and one should phlebotomise the *vena salvatella* and purge the bowels. He should not enter the bathhouse as long as the [swollen] part is hot, God willing.

¹⁹² Lit. 'two sandalwoods', see commentary.

الباب الرابع عشر

- ١: ١٤ الباب الرابع عشر في الحجامة. ¹⁹³
- ٢: ١٤ الحجامة تنقسم قسمين أحدهما مع شرط والثاني بلا شرط والموضع التي جرت العادة بشرطها هي ¹⁹⁴ النقرة والأخدعان وتحت الذقن والكاهل والمعصمان والساقان.
- ٣: ١٤ والحجامة تأخذ الدم من عروق صغار وتخفف عن البدن الامتلاء وقد يتفق في الندرة أن يخرج معها دم كثير سيما في الساقين. ¹⁹⁵
- ٤: ١٤ فأما منافعها فإن حجامة النقرة تنفع من الثقل في الرأس إذا كان معه شيء من الحرارة.
- ٥: ١٤ وأما الأخدعان ¹⁹⁶ فتخفف عن الرأس والوجه والعينين وتنفع من وجع أصول الأسنان التي يخرج منها الدم.
- ٦: ١٤ والتي تحت الذقن تنفع من القلاع الأحمر واللثة الدامية.
- ٧: ١٤ وأما الكاهل فمن الخفقان الذي معه حرارة ومعه امتلاء.
- ٨: ١٤ وحجامة المعصمين من البثور التي في الذراعين.
- ٩: ١٤ وحجامة الساقين من السكتة والصرع الدمويين ¹⁹⁷ ومن الدوار الذي معه حرارة ومن السلاق المزمن ومن وجع الكلى والمثانة والأرحام ومن الدماميل والبثور التي تكون في الفخذين ومن احتباس الحيض ويدر الطمث ومن كان من النساء سحنة وجهها حسنة ولونها أبيض فحجامة هذا الموضع أبلغ لها من الفصد وليكن ذلك قبل حيضتها بثلاثة أيام.
- ١٠: ١٤ ومما يقل وجع الحجامة ألا يبدأ |20b| بمص عنيف بل على تدريج وليكن الشرط بعد أن يحمّر الموضع جدا ويُلَيَّن الشرط على الجلود اللينة ويمسح الموضع بالدهن.
- ١١: ١٤ ويحترس من الحجامة من كان يصعد البخار الغليظ إلى عينيه أو من يتوقع له نزول الماء فيها.

¹⁹³ +O

¹⁹⁴ repeated in the margin هي

¹⁹⁵ في الساقين : الساقان

¹⁹⁶ بيان صح الأخدعان in the margin

¹⁹⁷ الدمويين : الدمويين

The Fourteenth Chapter

14:1 The fourteenth chapter on cupping.

14:2 Cupping is divided into two categories, one of the two is with scarification and the other without scarification. The sites that usually are scarified are the hollow of the neck, the lateral parts of the neck, below the chin, the interscapular region, the wrists, and the legs.

14:3 Cupping takes the blood from small veins and eases the overfilling in the body. Occasionally, albeit rarely, a substantial amount of blood might be extracted along with it, particularly in the legs.

14:4 As to its benefits, cupping the hollow of the neck is beneficial for heaviness in the head if it is combined with some heat.

14:5 As for [cupping] the lateral parts of the neck, it relieves the head, the face, and the eyes, and it is beneficial for pain in the roots of the teeth with which bleeding occurs.

14:6 [Cupping] what is below the chin is beneficial for red aphthae and bleeding gums.

14:7 As for the interscapular region, [cupping it is beneficial] for palpitation accompanied by heat and overfilling.

14:8 Cupping the wrists [is beneficial] for pustules on the forearms.

14:9 Cupping the legs [is beneficial] for sanguine apoplexy and sanguine epilepsy; vertigo combined with heat; chronic ptilosis; pain in the kidneys, the bladder, and the uterus; for boils and pustules on the thighs; for amenorrhoea, as it urges on the menses. For women with a good, white complexion, cupping this site is far better than phlebotomising her, and that should be [conducted] three days before her menstruation.

14:10 What reduces the pain of cupping is to not begin [20b] with a rigorous suction, but gradually. Scarification should be done once the site has become very red. The scarification should be gentle on gentle skins, and the site should be anointed with oil.

14:11 One should be cautious about cupping if someone has coarse fumes rising into his eyes, or is anticipated to suffer from a defluxion.

١٤: ١٢ وربما أحدثت الحجامه بياضا في الأخدعين عند موالاتها وذلك إذا تجردت العروق التي في ذلك الموضع بالشرط فلا يجري إليه الدم فيبقى اللحم أبيض لأن احمراره إنما يكون من الدم .

١٤: ١٣ وأما الحجامه بلا شرط فمتى تجذب ما يحتاج إلى اجتذابه كرها وتحمل الدم إلى الموضع وهي تُستعمل على وجهين إما بالمص وإما بالنار وهي أشد لزوماً وأجذب وتستعمل¹⁹⁸ على هذه الصفة¹⁹⁹ وذلك أن تأخذ قطعة عجين وتقرصها وتجعلها على الموضع الذي تريد أن تجعل عليه الحجامه وتشعل كاغذه وتجعلها على ذلك العجين وتكب عليها بسرعة محجمة بعد أن يكون الثقب الذي في المحجمة مشدودا فإن النار تنطفئ وتلزم المحجمة²⁰⁰ جدا فإن أردت أن تسترخي وتقع فتحت الثقب وقد تسترخي وحدها إذا برد الهوى من داخلها .

١٤: ١٤ وإن شئت أشعلت الكاغد وألقيته في المحجمة وجعلتها على الموضع .

١٤: ١٥ وقد تتخذ هذه المحاجم من نحاس أو فضة .

١٤: ١٦ ومن منافعها أنها متى علقت على الرأس²⁰¹ أو دون الشراسيف أو الجنبين²⁰² بعد الفصد قطعت الرعاف وإن وُضعت على القفا فتحت حلق من عرضت له الخوانيق للغذاء والدواء .

١٤: ١٧ وهي قوية الفعل في جذب المواد المنصبة إلى العينين إذا وُضعت على الرأس²⁰³ وإن علقت على الثديين قطعت سورة الدم أعني دم الحيض والنزف .

١٤: ١٨ وتنفع من الوجع إذا كان سببه بخار فإن كان سببه خلط رجع الوجع بعد ثلاثة أيام أو أربعة .

١٤: ١٩ وتنفع أصحاب المالنخونيا إذا علقت تحت الشرسوف²⁰⁴ الأيسر وعلى البطن وإن علقت على |21a| الطحال قطعت الإسهال السوداوي وقد بلغت بها بواسير المقعدة للعلاج إن شاء الله وهو المستعان لا رب غيره .

198 تستعمل : تستعمل

199 <ص>فة محجمة النار in the margin

200 المحجمة : الحجامه

201 الرأس : الناس

202 أو الجنبين repeated in the margin

203 الرأس : الناس

204 الشرسوف : الشراسيف corrected in the margin

14:12 Cupping sometimes causes whiteness in the lateral parts of the neck in continuous practice, and that is since the veins in that site are stripped bare by scarification, so that blood does not flow to it, thus the flesh remains white, since it is the blood that makes it red.

14:13 As for cupping without scarification, it is when you draw what needs to be drawn forcibly and transport the blood to the site. It is carried out in two manners, either by suction or by fire, which adheres better and draws better, and it is done according to this prescription: you take a piece of dough and make it into a pastille, and put it on the spot that you want to treat with cupping. Then you set fire to a paper and put it on that dough, and quickly put a cupping glass on it upside down. Once the hole in the cupping glass has been closed tight, the fire is extinguished, and the cupping glass adheres very tightly. And if you want to loosen it to let it fall off, you open the hole, but you can loosen it only when the air inside it gets cold.

14:14 If you want, you set fire to the paper and throw it in the cupping glass and apply it to the site.

14:15 These cupping glasses may be made of copper or silver.

14:16 Among their benefits is that when they are fastened on the head or below the false ribs or the flanks after phlebotomy, they stanch epistaxis. If they are fastened on the back of the head, they open the throat to whom choking from food and drugs occurs.

14:17 They are very effective in drawing matters that flow towards the eyes if they are applied to the head, and if they are fastened on the breasts, they stop the surplus of blood – I mean menstrual blood and haemorrhage.

14:18 They are beneficial for pain if its cause is a vapour, and if its cause is a humour, the pain returns after three or four days.

14:19 They help the melancholic if they are attached under the costal cartilages [of the false ribs] at left side and on the stomach, and if they are fastened on [21a] the spleen, they stop the melancholic diarrhoea, and even treat the haemorrhoids in the anus, God willing, for He is the saviour, no other Lord than Him.

٢٠:١٤ تمت المقالة في الفصد بتأييد²⁰⁵ الله تعالى وحسن عونه والحمد لله رب
†.....†²⁰⁶

²⁰⁵ بتأييد : تبأييد
²⁰⁶ one and half lines of erased text follow

14:20 The treatise on phlebotomy is completed with the support of God Almighty and the goodness of his assistance, praise be to God, Lord †.....†

Commentary

This commentary has several aims: (1) to discuss terminology; (2) to explain editorial remarks; (3) to suggest an alternative reading or interpretation; (4) to verify the quotations to which Ms. Escorial refers¹; and (5) to suggest further reading when some central medical statements are only briefly mentioned in Ms. Escorial. Drugs, potions and other remedies can be found in the index of *materia medica* and *List of Prescriptions*. The commentary follows the logical order of the paragraphs in the edition of Ms. Escorial.

0:1 †.....†: What most likely is text praising Allah has been erased from the manuscript. This may have happened due to the process of adapting the manuscript into a Christian culture when it was brought to Europe² – the manuscript belongs, after all, to a Spanish monastery. Despite using UV technology while consulting the physical copy of Ms. Escorial, no trace of what initially has been stated in the manuscript could be restored.

0:2 **Ibn**: instead of the alternative spelling, *bin*, that appears in the middle of personal names, I have chosen to limit the usage of the word *ibn* (alt. *bin*) to *ibn* throughout this edition in order to achieve coherence. Usually, if the word occurs in the beginning of a name, it is spelled *ibn*, whereas when it occurs in the middle, the initial *alif* falls off, resulting in *bin*. This may be helpful to librarians and people with less knowledge of Arabic naming tradition. Yet, when I have quoted sources in which the names are given following the traditional way, I have not interfered.

0:13 **Phlebotomised veins**: The fifth chapter is, as becomes clear in the chapter itself, about the phlebotomised veins, not about the blood in them, as Ms. Escorial

¹ In this commentary, I refer to numerous works in the Loeb Classical Library (LCL), a system that comes with various ways of marking the source. Therefore, the references are not unified, but depend on the information given in each work. In order to be as clear as possible when listing the sources, I have given the information available in each work.

² Penn, *Monks, Manuscripts, and Muslims: Syriac Textual Changes in Reaction to the Rise of Islam*, Hugoye: Journal of Syriac Studies, Vol. 12.2, 235-257, 2009 by Beth Mardutho: The Syriac Institute and Gorgias Press.

here reads: دم العروق المفصودة *dam al-‘urūq al-mafṣūda*, ‘blood of the phlebotomised veins’. Thus, the word دم *dam*, ‘blood’, is omitted.

0:17 **Epaphairesis**: repeated removal [of blood].³

1:1 **Nutriments**: For Galen’s theory on how food becomes nutriment, see e.g., Galen, *On the Usefulness of the Parts of the Body*, translated into English by Margaret Tallmadge May (1996); and Galen, *On the Properties of Foodstuffs*, translated into English by Powell (2003).

1:2 **Blood is the most balanced of the humours**: Galen: “Of the humors, the most useful and most familiar is the blood.”⁴ See also Maimonides, *Aphorisms 2*: “Blood is something composed of all the humors according to a natural ratio. It is called ‘blood’ because of its dominance over the other humors. And this is what comes out through venesection and cupping. When we say that the body contains four humors – blood, phlegm, yellow bile, and black bile – by blood we do not mean something composed of all the humors, but something existing, in our conception, unmixed with the other humors.”⁵

Humours: The principle of the humours explained by Hippocrates: “The body of man has in itself blood, phlegm, yellow bile and black bile; these make up the nature of his body, and through these he feels pain or enjoys health.”⁶ Different humours dominate during different seasons: “Phlegm increases in a man in winter; for phlegm, being the coldest constituent of the body, is closest akin to winter. [...] And in spring too phlegm still remains strong in the body, while the blood increases. For the cold relaxes, and the rains come on, while the blood accordingly increases through the showers and the hot days. For these conditions of the year are most akin to the nature of blood, spring being moist and warm. [...] And in summer blood is still strong, and bile rises in the body and extends until autumn. In autumn blood becomes small in quantity, as autumn is opposed to its nature, while bile prevails in the body during the summer season and during autumn.”⁷

Innate heat: Innate heat in Galen’s system: “There are two kinds of heat; the ordinary variety, which burns things up, and the *innate heat* of living creatures, which makes the body grow instead of consuming it, and also has the power of generation. The innate heat is often equated with nature in Galen’s works; it is the life of the body, which dies when it is extinguished. Since it is distributed to every part with the arterial blood, it is often also equated with blood. The innate heat, as its name suggests, is not acquired from outside; it comes to the embryo through

³ Brain, p. 134.

⁴ Galen, *Temp.*, II, 3, 603K (LCL 546: 158-149).

⁵ Maimonides, *Aphorisms 2*, 1, p. 26.

⁶ Hippocrates, *Nat. Hom.*, IV (LCL 150: 10-11).

⁷ Hippocrates, *Nat. Hom.*, VII (LCL 150: 18-21).

the semen, which contains the hot principle, and resides in the arterial blood of the left ventricle when the heart is formed.”⁸

As wood for the fire: Corresponds to Galen: “Not only do the parts of the animal derive their nourishment from the blood, but the innate heat also owes its continuance to it, just as the fire on the hearth does to the burning of suitable logs, by which we see whole houses made warm.”⁹

As Galen said: This clearly is a quote from Galen, although I have not been able to identify the source.

Motion: Galen explains this term stating the following: “When, therefore, such and such a body undergoes no change from its existing state, we say that it is *at rest*; but, if it departs from this in any respect we then say in this respect it *undergoes motion*. Accordingly, when it departs in various ways from its pre-existing state, it will be said to undergo various kinds of motion.”¹⁰ This can happen in respect to colour, flavour, quality, transference, growth and decay, genesis and destruction.¹¹

1:3 **Erasistratus:** Ms. Escorial reads أرسطاطليس *Aristātalīs*, but most probably Aristotle is not meant, but Erasistratus, who was notorious for rejecting bloodletting and preferring fasting. See e.g., *Galen’s Book on Venesection against Erasistratus*, and *On Venesection against the Erasistrateans at Rome in Brain, Galen on Bloodletting*.¹² Therefore the suggested emendation is أراسسراطس *Arasistrāṭus*, also supported by Qusṭā ibn Lūqā:

"إن جالينوس ذكر العلاج بالفصد في كتابه المسمى "حيلة البرء" وفي كتابه "في تدبير الأصحاء" وفي مقالة مفردة ناقض فيها أراسسراطس وبين فيها بيانا واضحا أنه كان مخطئا في تركه العلاج بالفصد"¹³

1:5 **Hippocrates...three kinds of nutriment:** “Nutriment is what nourishes, what can nourish, and what will nourish.”¹⁴ Galen’s views on this topic, based on Hippocrates’ statement above, that also introduce the terms ‘quasi-nutriment’ and ‘destined nutriment’ used in this edition, are thoroughly discussed in Galen, *Nat. Fac., I. XI*: “For to that which is already being assimilated he gave the name of

⁸ Brain, p. 8.

⁹ Galen, *Cur. Rat. Ven. Sect.*, p. 72.

¹⁰ Galen, *Nat. Fac.*, I, II (LCL 71: 4-5).

¹¹ Galen, *Nat. Fac.*, I, II (LCL 71: 4-7).

¹² Both works, *Galen de Venae Sectione adversus Erasistratum Liber* (pp. 15-37), and *Galen de Venae Sectione Adversus Erasistrateos Romae Degentes* (pp. 38-66) extant in Brain 1986, *Galen on Bloodletting*.

¹³ Qusṭā ibn Lūqā, *Faṣḍ*, p. 290.

¹⁴ Hippocrates, *Nutriment*, 8 (LCL 147: 328-329). For an Arabic translation of the same work, see Hippocrates, *De alimento*, p. 3,3f.

nutriment; to the similar material which is being presented or becoming adherent, the name of *quasi-nutriment*; and to everything else – that is, contained in the stomach and veins – the name of *destined nutriment*.”¹⁵

That which is constantly dissolved from them: Ms. Escorial reads “وهو العوض مما” and “يتحلل دايبا”, corrected to “وهو العوض مما يتحلل دائما”, supported by Ms. Parma: “והוא יהיה” “and that is instead of what is constantly dissolved from them”.

1:6 **Inflation:** According to Galen, inflation, in Arabic *intifāḥ*, is a swelling that arises due to thin phlegm. The term is a translation of the Greek ἐμπύσημα, which means inflations of the cellular tissue, or stomach, as well as swellings of the eye and knee. The term *intifāḥ* is also used as a common name for swellings.¹⁶

1:8 **He said:** Most likely Galen is meant, as this passage and the following passages continue with words of Galen: “And if one considers along with this the adjacent viscera, like a lot of burning hearths around a great cauldron – to the right the liver, to the left the spleen, the heart above, and along with it the diaphragm (suspended and in a state of constant movement), and the omentum sheltering them all—you may believe what an extraordinary alteration it is which occurs in the good taken into the stomach. How could it easily become blood if it were not previously prepared by means of a change of this kind?”¹⁷

Large omentum: Galen on omentum: “Why is this part [the omentum] so very extensive in man, covering all the intestines? Is it that in man the concoctions are very feeble and the skin very soft, devoid of hair, and very easily injured? In other animals, to be sure, the omentum does not cover the stomach alone, but spreads over the intestines to a greater or lesser extent in accordance with the nature of each animal.”¹⁸

1:9 **Whenever the stomach feels the need for nutriment:** understood as it is the attraction (*imtiṣāṣ*) that brings the food to the stomach, and then the stomach clings to the food and thus, contains nutriment. Galen says: “And this cannot possibly take place in any other way than by the stomach drawing the food to itself”.¹⁹

1:10 **Porta:** Galen discusses this topic in *UP*, IV, 1, pp. 204ff.

1:11 **And had it not been for the watery fluid that mixes with the blood:** Galen: “For the chyle resulting from the food could not be taken up successfully from the stomach into the veins and could not pass easily through the many fine

¹⁵ Galen, *Nat. Fac.*, I, XI (LCL 71: 42-43).

¹⁶ Ibn Ḡanāḥ II, pp. 786-787.

¹⁷ Galen, *Nat. Fac.*, III.VII, 163-164 (LCL 71: 254-255).

¹⁸ Galen, *UP*, Fourth Book, 210, p. 215.

¹⁹ Galen, *Nat. Fac.*, III, VIII (LCL 71: 270-271).

veins in the liver unless some thinner, watery fluid were mixed with it as a vehicle. In fact, this is the reason why water is useful to the animal; for although no part can be nourished by water, nutriment could not be distributed from the stomach if it were not conducted in this way by moisture of some sort.”²⁰

Straight veins: What is meant with this is unknown. Perhaps Ms. Escorial should read *al-‘urūq al-‘azīma*, ‘great veins’ – ‘great vessels’ are mentioned in Galen, *UP*,²¹ ‘great artery’ features in Galen, *Meth. Med.* III.²²

1:12 **A large vein:** i.e., *vena cava*. Galen: “Another vessel, a vein, which is called hollow because of its size [the vena cava], passes from the convexity of the liver upward and downward and resembles a sort of double trunk; for some parts of our body are higher than the liver and some are lower.”²³

Convexity of the liver...: Hippocrates: “Root of veins, liver; root of arteries, heart.”²⁴ Corresponds to al-Rāzī’s *Kitāb al-Manṣūrī*: “All the veins arise from the convexity of the liver, the liver being concave on the interior side, convex on the exterior side. A large vein grows from its convex side.”²⁵ For a complete chapter on veins, see al-Rāzī, *Kitāb al-Manṣūrī*, chapter 5 (pp. 36-43).

By the instruments assigned for it: perhaps kidneys. Galen: “When these thin fluids have finished their work, they should no longer be retained in the body because they would become an alien burden to the veins. This is the purpose for which the kidneys have been formed, hollow instruments that attract this thin, watery residue through one set of canals and expel it through another.”²⁶

1:13 **They take from each other, because they are connected:** The closest I have come in finding the quote in Hippocrates’ *Nutriment* is: “There is one flowing together, one breathing together: all things are in accord. All things belong to one system, but part by part the parts of each part fulfill their functions.”²⁷ See also Hippocrates, *Places In Man*: “All vessels communicate and flow into one another.”²⁸ See also Galen, *UP*: “All over the body the arteries and veins communicate with one another by common openings and exchange blood and pneuma through certain invisible and extremely narrow passages.”²⁹

²⁰ Galen, *UP*, Fourth Book, 1, p. 207.

²¹ Galen, *UP*, Sixteenth Book, II, p. 713.

²² Galen, *Meth. Med. III*, XI, 800K (LCL 518: 208-209).

²³ Galen, *UP*, II, 378, p. 682.

²⁴ Hippocrates, *Nutriment*, XXXI (LCL 147: 352-353).

²⁵ Al-Rāzī, *Kitāb al-Manṣūrī*, p. 36 (my translation).

²⁶ Galen, *UP*, Fourth Book, p. 207.

²⁷ Hippocrates, *Nutriment*, 23 (LCL 147: 332-333).

²⁸ Hippocrates, *Places In Man*, 3 (LCL 482: 26-27).

²⁹ Galen, *UP*, Sixth Book, p. 303.

2:1 **The circumstances that shall be considered:** Corresponds to what Galen and also Qustā ibn Lūqā have written on the topic.³⁰ In his *Kitāb al- Iklīl*, al-Rāzī states that unlike phlebotomy, cupping may be used during all seasons, with whomever and wherever.³¹

2:2 **Disposition:** *Diathesis*, in Greek διάθεσις, a term that Galen uses for any stable condition of body, whether it be normal or abnormal,³² to which Montanari gives “disposal, disposition, state, condition, way of being (*of body and spirit*)”.³³ Close to *crasis*, in Greek κρᾶσις, i.e., “the mixture of humours, or of qualities, in the constitution of an individual; temperament”,³⁴ for which Montanari gives “temperament, constitution, nature”.³⁵ In Galen, *Meth. Med. Hankinson*, Galen writes “the conditions of the parts, which some call ‘dispositions’”.³⁶

Divergent: The word in Ms. Escorial is corrupt, but Ms. Parma reads מתחלפות, ‘divergent’.

2:3 **Provisions for the traveller:** Ms. Escorial reads للركاب, *li-l-rākib*, above which للمسافر *h li-l-musāfir*. *خ* likely stands for *nusha uhrā*, offering a variant reading, that usually is written over the variant in the margin.³⁷

2:4 **Nutriments at the time of the paroxysm intensifies the fever:** Galen: “When movement to the depths prevails without inflammation of a viscus or a surplus of humors, you will do no harm if you nourish a little more quickly during the paroxysms whereas, if there is either some inflammation or abundance, you must guard against nourishment prior to the paroxysm as this is a very harmful thing [to do].”³⁸

2:5 **Hippocrates...: “Abstain from food at the time of the paroxysm”:**

Hippocrates: “And if through lack of forethought there is an attack of fever, nothing should be given for three days except water. If the fever go down in that time, well and good; if it does not, treat the patient with barley water, and on the fourth or the seventh day he will sweat and be quit of the trouble.”³⁹

³⁰ Galen, *Cur. Rat. Ven. Sect.*, p. 67; Qustā ibn Lūqā, *Faṣḍ*, pp. 330-331.

³¹ Al-Rāzī, *Iklīl*, p. 145 (f. 31a).

³² Brain, p. 178.

³³ Montanari, p. 486.

³⁴ Brain, p. 177.

³⁵ Montanari, p. 1171.

³⁶ Galen, *Meth. Med. Hankinson*, p. 30.

³⁷ Gacek, *AM*, p. 314.

³⁸ Galen, *Meth. Med. III, XI*, 21. 809K (LCL 518: 220-223).

³⁹ Hippocrates, *Regimen III*, LXXII (LCL 150, pp. 390-393).

2:6 **Physician**: here the Arabic word *mutaṭabbib* مططب is translated simply as ‘physician’, even though a terminological differentiation could be made between *ṭabīb* طبيب, ‘philosopher-physician’, and *mutaṭabbib*, ‘practitioner’.⁴⁰

Fourteen days: Hippocrates: “Acute diseases come to a crisis in fourteen days.”⁴¹ It also seems to be a defining limit for the fate of the patient, as Hippocrates mentions while talking about a patient with jaundice: “The patient generally dies within fourteen days; if he survives that many, he recovers.”⁴² For a thorough explanation of how this can be concluded, and how the regimen should be applied, see Galen, *Opt. Med. Ex.*, p. 67 (4, 6-10).

2:7 [**In the case of a very**] **acute illness, one has to apply a very restricted regimen**: This concept is confirmed both by Hippocrates and Galen. Hippocrates: “Where the disease is very acute, immediately, not only is the pain extreme, but also it is essential to employ a regimen of extreme strictness.”⁴³ Galen referring to Hippocrates: “When the disease is as its height a very restricted regimen must be used.”⁴⁴

A very restricted regimen: Ms. Escorial reads: المرض البالغ في اللطافة جدا ينبغي أن *al-maraḍ al-bāliḡ fi-l-laṭāfa ġiddan yanbaġī an yudabbar bi-l-tadbīr al-bāliḡ fi-l-laṭāfa ġiddan*. It is likely that the copyist of Ms. Escorial has copied the words *al-bāliḡ fi-l-laṭāfa ġiddan* twice by mistake, and one wants to refer to an acute, *ḥādd*, illness. The concept should, as seen above, be that a very restricted regimen has to be applied in a very acute illness. ‘Very restricted regimen’ is attested in Arabic as اللطافة من الغاية ما هو في التدبير *al-tadbīr mā huwa fi-l-ġāya min al-laṭāfa*,⁴⁵ whereas التدبير لطيف *tadbīr laṭīf* is simply ‘a light diet’.⁴⁶

Regimen: Cf. Powell in Galen, *Alim. Fac.*: “The way to this state of excellence, many believed, was through *diāita*, which we usually translate as regimen, and which meant much more than the word diet that is derived from it, embracing as it did virtually everything to do with the lifestyle of the individual. According to Celsus it was one of three forms of therapy available to the physician (although therapy was only a part of its purpose) – the others being surgery and pharmacology. The concerns of regimen were with the whole of an individual’s

⁴⁰ Temkin, p. 72.

⁴¹ Hippocrates, *Aphorisms*, XXIII (LCL 150: 112-113).

⁴² Hippocrates, *Critical Days*, 9 (LCL 509: 308-309).

⁴³ Hippocrates, *Aphorisms*, I.VII (LCL 150: 102-103).

⁴⁴ Galen, *Opt. Med. Ex.*, p. 81.

⁴⁵ translated from Galen by *Ḥunayn ibn Ishāq* in Galen, *Opt. Med. Ex.*, pp. 80-81.

⁴⁶ *ibid.*, pp. 66-67.

activities, covering such things as how often and when one should bathe; the nature of one's work and leisure; sexual activity; and, of course, the food one ate and its preparation. This was a holistic approach to personal health two millennia before the word was coined and the concept popularized in the twentieth century."⁴⁷

2:9 **Barley broth**: also translated as 'gruel'. It was considered a suitable dish for many ailments. Hippocrates: "Now I think that gruel made from barley has rightly been preferred over other cereal foods in acute diseases, and I commend those who preferred it; for the gluten of it is smooth, consistent, soothing, lubricant, moderately soft, thirst- quenching, easy of evacuation should this property too be valuable, and it neither has astringency nor causes disturbance in the bowels or swells up in them. During the boiling, in fact, it has expanded to the utmost of its capacity."⁴⁸

Lubāb: Ms. Escorial reads *لباب lubāb*, most likely what is meant here is *لباب الخبز lubāb al-ḥubz*, bread pith.⁴⁹ Ms. Parma reads *לבִּיבֹת הַפֶּת levivot haPat*, bread flour.

2:10 **The boys...are not to be phlebotomised**: Corresponds to Galen: "Those who have large veins, who are moderately slender and neither fair nor soft-fleshed, you will evacuate freely. Those of the opposite type, however, must be sparingly evacuated, since they have little blood and flesh that transpires well. For the same reason you will not phlebotomise children up to the age of fourteen."⁵⁰

2:11 **The same goes for old men, i.e., from the beginning of the sixties**: Corresponds to Galen: "Some sixty-year-olds can no longer bear phlebotomy, while some people of seventy still can. But obviously you will remove less from these, even if they appear to be in the same condition as a body in the prime of life."⁵¹

2:13 **Galen mentioned that he phlebotomised old men in the age of seventy years**: Galen: "You have learned to trust the strong, regular pulse as an infallible sign of strength of the faculties; this applies even more strongly to the large pulse. Thus you will phlebotomise even the seventy-year-olds, if the kind of pulse I have mentioned is present, whenever their condition demands it."⁵²

2:14 **Al-Fuṣṭāt**: Ms. Escorial reads *Madīnat Miṣr*, most likely referring to al-Fuṣṭāt, that was the capital of Egypt.⁵³ It is reasonable to think that al-Rāzī treated

⁴⁷ Galen, *Alim. Fac.*, pp. 4-5.

⁴⁸ Hippocrates, *Regimen in Acute Diseases*, X (LCL 148: 70-71).

⁴⁹ Nasrallah, p. 570.

⁵⁰ Galen, *Cur. Rat. Ven. Sect.*, p. 87.

⁵¹ Brain, p. 131.

⁵² Galen *Cur. Rat. Ven. Sect.*, p. 87.

⁵³ Minorsky, p. 151.

this Baghdadi man after his service in Egypt, considering the absence of any documented evidence of al-Rāzī practicing medicine in Egypt. Thus, most likely this Baghdadi man worked in Egypt, returned home, and then received treatment in his seventies.

2:15 **Verjuice**: “An acidic juice obtained by pressing unripe grapes, or a juice of other unripe fruits”.⁵⁴

Syrup: According to Temkin, syrups were “an Arabic contribution to pharmacology.”⁵⁵

Syrup of both [types of] pomegranates: See commentary for §11:4.

Sikbāğ, ḥiṣrimiyya, rummāniyya, summāqiyya, ‘adasiyya: For more on these dishes, see commentary for §11:6.

2:17 **Three raṭls**: The weights and measures depend on time and place, introducing a degree of uncertainty regarding their equivalence. For a brief overview of weights and measures, see *index of weights and measures* at the end of this book.

2:18 **There is no fixed limit**: Corresponds to Galen: “we cannot lay down in black and white a fixed amount to be removed in each of the conditions mentioned.”⁵⁶ Furthermore, Qusṭā ibn Lūqā mentions that there is no specific amount of blood one shall extract, but instead, one has to take into account all the distinguishing features of each case, i.e., body type, nature of the illness, mixture of the country, the present time, the age of the patient and their strength.⁵⁷

2:19 **Galen mentioned...**: Galen: “I have known myself remove as much as six pounds of blood from some patients, extinguishing the fever forthwith and doing the faculties no harm; yet in others one and a half could not be taken without some slight injury to the faculties, and if two had been taken from these patients, the gravest damage would have resulted.”⁵⁸

2:20 **In his treatise, *On Strength and Weakness*, Qusṭās talked about**

‘Abdullāh al-Rāzī, who phlebotomised a patient...: Ms. Escorial reads قسطاس, Qusṭās, referring to Qusṭā ibn Lūqā, who indeed wrote the aforementioned treatise, which was preserved in the Aleppo Ḥakīm collection, and could therefore not be consulted.⁵⁹ The subject of who was phlebotomised was missing, thus the copyist of Ms. Escorial has added إنسانا أظنه *insānan aẓunnuhu* ‘a human, I suppose’, i.e., a

⁵⁴ Liddell/Scott, p. 1229a.

⁵⁵ Temkin, p. 127.

⁵⁶ Galen, *Cur. Rat. Ven. Sect.*, p. 89.

⁵⁷ Qusṭā ibn Lūqā, *Faṣd*, p. 364.

⁵⁸ Galen, *Cur. Rat. Ven. Sect.*, p. 89.

⁵⁹ Sezgin, p. 273.

patient. Gacek writes that *azunnuhu* is one of the expressions that are used together with corrected forms.⁶⁰ That ‘Abdullāh al-Rāzī phlebotomised a patient is supported by Ms. Parma: זכר קוסטאס בשם עבד אללה אלראזי כי הוא הקיז חולה “and Qusṭās mentioned about ‘Abdullāh al-Rāzī that he phlebotomised a patient”. The marginal note reads: “إنسانا أظنه هذا وأما الأمر المنتسخ منها هذه فليس فيها شيء”, “A human, I suppose, and as for the thing that is copied from this [مقالة, treatise], there is nothing in it.”

Dirham: Ms. Escorial reads *dirham kaylā*, which could be read either as an adverb, *dirham kaylan*, ‘dirham as a measure’, alternatively as *dirham al-kayl*, ‘a weight dirham’.⁶¹ Most likely what is meant with this is simply that the question is about *dirham* used as weight.

2:21 **Hard-working:** Ms. Escorial reads *من كان مباطشا man kāna mubāṭišan*. The root of this noun stands for ‘seizing violently’, ‘assaulting’, ‘labouring’, ‘struggling’,⁶² understood as an overworked, hard-labouring person. Ms Parma reads: מי שיהיה רופא *mi she-ihye rofe*, “who is a physician”.

Rational thinking in sciences that require concentration: Ms. Escorial reads *al-‘ulūm al-daqīqa*, ‘exact sciences’, understood as ‘exacting sciences’, i.e., sciences that require concentration – for clarifying what is meant by this term I want to thank Professor Tzvi Langermann. On the other hand, in their book *Islamicate Occult Sciences in Theory and Practice*, Liana Saif and Francesca Leoni mention that the term *al-‘ulūm al-daqīqa*, i.e., ‘the intricate sciences’, is synonymous with the occult sciences.⁶³ This sort of an interest comes with a risk: “No-one who devotes too much effort to thinking about a certain science (*fikr fī ‘ilm mā*) can avoid ending up with melancholy”.⁶⁴

2:22 **Who never has been phlebotomised...:** Galen: “someone who is not used to bleeding [should not proceed to perform venesection]”.⁶⁵

2:23 **The most tolerant bodies for phlebotomy are...:** Galen: “Those who have large veins, who are moderately slender and neither fair nor soft-fleshed, you will evacuate freely. Those of the opposite type, however, must be sparingly evacuated, since they have little blood and flesh that transpires well.”⁶⁶

⁶⁰ Gacek, *Taxonomy*, pp. 226-227.

⁶¹ Hinz, p. 3.

⁶² Lane, book 1 part 1, p. 218.

⁶³ Saif, p. 2.

⁶⁴ Swain, pp. 121-122.

⁶⁵ Quote from Galen’s *Method of Medicine to Glaucōn* in Maimonides, *Aphorisms* 12, 5, p. 29. In *Method of Medicine to Glaucōn*, Galen seems to be talking about purging in this statement. See Galen, *Meth. Med. G*, 15, 45K (LCL 523: 404-407).

⁶⁶ Galen, *Cur. Rat. Ven. Sect.*, p. 87.

2:24 **We may also see bodies that are fat...**: Galen in Maimonides, *Aphorisms* 24: “There are bodies that are extremely emaciated and [yet] have much blood, and there are other bodies that are obese and fat and [yet] have little blood.”⁶⁷

2:25 **Epidemics**: Ms. Escorial reads أقديميا *Aqadīmiyā*. Most probably what is meant is an arabicised form of ‘Epidemics’, the title of which features in Arabic as إفيديميا *Ifīdīmiyā*⁶⁸ and إبيديميا *Ibīdīmiyā*.⁶⁹

A woman who suffered from amenorrhea for eight months: I have not been able to consult this specific book in Galen’s commentary on Hippocrates’ *Epidemics*, but the case is documented in other sources. “Galen reports [the case] of a woman whose menstruation was retained for eight months and who was extremely emaciated. When he saw that the blood was flowing copiously in her vessels but that it had a livid color, he bled her and extracted on the first day a quantity of one and a half *raṭl* of dark blood resembling liquid tar. On the second day he extracted one *raṭl* and on the third day eight ounces. And he said that she was cured and her body returned to its [normal] condition in a short time.”⁷⁰

2:26 **Muḥammad ibn ‘Abd al-Malik al-Zayyāt**: Ms. Escorial reads Aḥmad ‘Abd al-Malik al-Zayyāt, probably referring to Muḥammad Ibn ‘Abd al-Malik al-Zayyāt (d. 243/847), who was a vizier in the Abbasid period under the caliphs al-Mu‘taṣim and al-Wāṭiq, and an important sponsor of the translation of the works of Galen.⁷¹

2:27: **Experience**: It was highly important that the physician was educated and has experience, as already Hippocrates mentioned: “Life is short, the Art long, opportunity fleeting, experiment treacherous, judgment difficult. The physician must be ready, not only to do his duty himself, but also to secure the co-operation of the patient, of the attendants and of externals.”⁷² In *Epidemics* I, he says: “The art has three factors, the disease, the patient, the physician. The physician is the servant of the art. The patient must cooperate with the physician in combating the disease.”⁷³

Nature: As Tallmadge May puts it, “By ‘Nature’ we mean the primary essence which is the basis of all bodies that are generated and decay.”⁷⁴ Throughout Ms. Escorial the word ‘Nature’ is used in expressions for bowel functions, such as

⁶⁷ Maimonides, *Aphorisms* 24, 17, p. 79.

⁶⁸ Galen, *Com. Hip. Ep.* p. 16.

⁶⁹ Galen, *Com. Hip. Ep.* p. 26.

⁷⁰ This story features in book 6 of Galen’s commentary of Hippocrates’ *Epidemics*, see Maimonides, *Aphorisms* 24, 17, p. 79.

⁷¹ Ibn Abī Uṣaybi‘a, *LHM*, 9.49, p. 554, footnote 62.

⁷² Hippocrates, *Aphorisms* I, 1 (LCL 150: 98-99).

⁷³ Hippocrates, *Epidemics* I, 11 (LCL 147: 170-171).

⁷⁴ Galen, *UP*, May’s introduction, p. 10.

‘detention of Nature’, i.e., constipation, and the like. See also commentary for §1:2, **innate heat**.

2:28 **Scammony**: The Arabic word that features in Ms. Escorial, المحمودة, *al-mahmūda*, is a synonym for السقمونيا, *al-saqmūniyyā*, i.e., *convolvulus scammonia*. The resin of the dried, milky sap extracted from its living roots has a strong laxative effect.⁷⁵

2:30 **Spring is the most optimal season for phlebotomy**: Galen: “The first point is that the health of the primary body parts consists on the balance of the mixture of hot, cold, dry and wet. The second is that spring is the most balanced season in (terms of) mixture when it maintains its characteristic mixture, and blood therefore increases during it.”⁷⁶

2:31 **Galen mentioned...Rome**: I have not managed to locate this quotation.

2:33 **The Big Dipper**: The asterism of Big Dipper consists of seven bright stars that belong to the larger constellation of Ursa Major, i.e., Dubhe (α), Merak (β), Phecda (γ), Megrez (δ), Alioth (ε), Mizar (ζ), and Benetnash (η).⁷⁷

Ursa Minor: The constellation of Ursa Minor consists of three bright stars, α, β and γ, of which the Arabic term *farqadān*, acc. and gen. *farqadayn*, refers to the stars named Kochab (β) and Pherkad (γ).⁷⁸

Canopus: Canopus (α) is the brightest star in the constellation of Carina, and the second brightest of all stars in the night sky.⁷⁹

2:34 **Countries**: Content identical to information given in several long passages in Hippocrates’ *Airs, Waters, Places* (LCL 147), chapters III-V. See also Galen, *Meth. Med. G.*, Book I, chapter 15 (LCL 523: 402ff.).

2:35 **Blood increases by eating young meat and confections, and by drinking wine**: Foodstuffs discussed in detail in Galen: *On the Properties of Foodstuffs*, edited and translated by Powell (2003). According to Galen, the flesh of animals from the pig family is the best meat,⁸⁰ but it is understandable that al-Rāzī due to Islamic influences does not hold this view. Young meat in general, according to Galen, is superior to the meat of older animals.⁸¹ Of wines, thick, red wines are the most beneficial for producing blood.⁸²

⁷⁵ DTr., IV 160, pp. 674-675.

⁷⁶ Galen, *Com. Hip. Ep.*, I, p. 77.

⁷⁷ Bakich, p. 300.

⁷⁸ Bakich, p. 302.

⁷⁹ Bakich, p. 168.

⁸⁰ Galen, *De Alim. Fac.*, III:1.

⁸¹ Galen, *De Alim. Fac.*, III:18.

⁸² Galen, *De Alim. Fac.*, III:39.

Wine: Wine, in Arabic نبيذ *nabīd*, is defined as either grape or date wine in al-Kindī, *Aqrābādīn*.⁸³

2:37 **Hippocrates declared this...:** I have not managed to locate this quotation.

2:38: **The humours in the body are [not] balanced:** Since the principle of phlebotomy is to restore the balance in the body when the humours are out of balance, most likely a negation was missing.

2:39 **As Galen said in his book *On Simple Drugs*:** I have not been able to verify this quotation. The translation of this book into English has not been completed yet, but seems to be an ongoing project by John Wilkins.

3:2 **The causes that make phlebotomy necessary:** Galen in *Cur. Rat. Ven. Sec.:* “Those who intend to use phlebotomy must consider first of all how many states of the body there are that call for evacuation. The next question is, which of these states require evacuation by phlebotomy; for there are many conditions, some of which need some other sort of evacuation, and certainly not bloodletting.”⁸⁴

3:3 **Overfilling:** In *Galen on Bloodletting*, Brain translates this as *plethos*, or *plethora*, from the Greek πλῆθος, that stands for excessive quantity or surplus.⁸⁵ Galen: “Whenever the humors are increased to an equal degree to each other, [doctors] call this ‘abundance’ or ‘plethora’. On the other hand, whenever the body is already full of yellow or black bile, or phlegm, or the serous humors, they call such a condition *kakochymia* and not plethora. Plethora is treated by the letting of blood, and by numerous baths, exercises and rubbings, as well as by discutient medications, and in addition by all fastings, which I covered comprehensively in the treatises on health. *Kakochymia*, however, is treated by the specific evacuation appropriate for each of the humors in excess.”⁸⁶ Every excess is harmful, as stated by Hippocrates: “all excess is hostile to nature.”⁸⁷

Overfilling, which is divided into two parts: i.e., overfilling relating to vessels, and overfilling affecting the strength. In *Galen on Bloodletting*, Brain translates these as *plethos by filling* and *dynamic plethos*: “It has been shown in my book on plethos that plethos is of two kinds, both in origin and in terminology. One set of signs indicates dynamic plethos, another the variety due to dilatation of the vessels containing the humours, which some call plethos by filling.”⁸⁸

⁸³ Al-Kindī, *Aqrābādīn*, p. 339. For more on wines, see Galen, *Alim. Fac.*, III:39 (pp. 149-150); Galen, *Meth. Med. II, XII*, chapter 4; Dioscorides, Book V, 11, pp. 605-606; and Hippocrates, *Regimen III* (LCL 150: 324-327).

⁸⁴ Galen, *Cur. Rat. Ven. Sect.*, p. 67.

⁸⁵ Montanari, p. 1681.

⁸⁶ Galen, *Meth. Med. III, XIII*, 891K (LCL 518: 344-345).

⁸⁷ Hippocrates, Aphorisms II, LI (LCL 150: 120-121).

⁸⁸ Galen, *Cur. Rat. Ven. Sect.*, p. 71.

Overfilling relating to vessels: Galen: “The other sort, which is known as plethos by filling, also frequently rushes down into parts, leading to swellings, but it is a cause of apoplexies and rupture of veins as well; it is therefore essential to try to evacuate plethos quickly, before it has a chance to do the patient some grave harm.”⁸⁹

Pneuma: Galen identifies three types of pneuma: vital pneuma that is generated in the heart and the arteries, that is produced from the inhalation and vapourisation of the humours; psychic pneuma, that is generated from a further refinement of the vital pneuma in the retiform web through the carotid arteries, reaching the ventricles of the brain;⁹⁰ and natural pneuma, generated in the liver and distributed through the veins.⁹¹

The body is healthy: Galen: “when the faculties are oppressed by plethos, it may be that the person has not yet become ill.”⁹²

Magnitude of pulse: In general, pulse is a strong prognostic sign. For more about pulse in prognostics, see, e.g., Maimonides, *Aphorisms 4*, “Containing aphorisms concerning the pulse and the prognostic signs to be derived from it”.⁹³

Urine: Urine in general is a bodily fluid from which prognostic signs can be derived. See, e.g., Hippocrates, *Prognostics*, Iyōb Urhāyā’s *Kitāb fī l-Bawl* in al-Rāzī’s *The Comprehensive Book*,⁹⁴ and Maimonides, *Aphorisms 5* “Containing aphorisms concerning the [prognostic] signs to be derived from the urine”.⁹⁵

3:4 Indication: Galen attests that the term ‘indication’ is “the discovery of the truth about the thing in question arising out of the nature of the thing and made through following out the clues given by what is clearly observable”.⁹⁶ Kieffer writes that the term ‘indication’, in Greek *endeixis*, is “a medical term and is preserved in the modern medical use of the word”.⁹⁷

3:5 These dreams, as Hippocrates mentioned...: In *Epidemics I*, Hippocrates gives a story of Erasinus, who manifested a fever after supper, and suffered from delirium, distress, exacerbation, convulsions with sweating, discomfort, fear, and dreams. His urine was dark with round particles in it, and towards the end of the fifth day he died.⁹⁸ The symptoms resemble the indications of plethos described in

⁸⁹ Galen, *Cur. Rat. Ven. Sect.*, p. 74.

⁹⁰ Galen, *PHP VII 3*, p. 444-445. For an explanation how this works, see Galen, *PHP VII 3-4*, pp. 442-453.

⁹¹ Galen, *UP*, p. 48.

⁹² Galen, *Cur. Rat. Ven. Sect.*, p. 71.

⁹³ Maimonides, *Aphorisms 4*.

⁹⁴ Kahl, *Rhazes*, p. 276ff.

⁹⁵ Maimonides, *Aphorisms 5*, p. 71ff.

⁹⁶ Galen, *Inst. Log.*, p. 42.

⁹⁷ Galen, *Inst. Log.*, p. 100.

⁹⁸ Hippocrates, *Epidemics I* (LCL 147: 207-209).

this paragraph. Dreams indicating multitude of blood are not mentioned in *Dreams* or *Regimen IV* by Hippocrates. In *Epidemics VI*, Hippocrates mentions the following: “Overfullness is apparent, the blood vessels are visible.”⁹⁹ It could be possible that the word ‘dreams’, أحلام, should be read as ‘signs’, أعلام in this case. It is also very possible that what al-Rāzī is referring to is Galen’s commentary on Hippocrates’ *Humours*, see below.

Whoever sees snow and rain, this indicates the multitude of phlegm: The quoted part in Ms. Escorial does not correspond to the content of Rufus’ *Medical Questions*. On the contrary, the passage does look very similar to Galen in his commentary on Hippocrates’ *Humours*: “Dreams belong to the things that regularly indicate the disposition of the body. If someone see fire in a dream, then this man suffers from yellow bile. If rain appears, then know that cold liquid is in overabundance. Likewise also if [someone see] snow, ice, or hail, this indicates cold phlegm; if he thinks that he is in a malodorous place, this indicates the putrefaction of the humours. If he sees the crests of cocks, or something flaming red, this indicates that blood is in overabundance. If he sees something dark-coloured or thinks that he is in a dark place, then this indicates breaths [i.e., flatulence.]”¹⁰⁰ I am very grateful to Professor Peter Pormann for his generous help with identifying the quote in this passage.

Dreams: Dreams too are a strong prognostic sign. “For Rufus the way melancholy affects the mind is not simply that it leads to odd, morbid, anxious thoughts or dreams.”¹⁰¹ In the quoted work, *Medical Questions*, Rufus of Ephesus provides many examples in which dream interpretation has been used in diagnostics of overfilling.¹⁰² Cf. Mattern: “Following Hippocrates and other predecessors, Galen recognized several sources of dreams, including some that might make sense to modern readers. A dream could reflect an imbalance of the humours, and a wrestler suffering from an excess of blood, for example, dreamed of standing in a cistern of blood; snow or ice would represent the cold, wet humour of phlegm, and so on.”¹⁰³

3:6 Overfilling affecting the strength: Galen: “If, then, some people who are still engaging in their usual occupations complain of feeling heavy, slow, lazy and sluggish, this is dynamic plethos.”¹⁰⁴

3:7 Even if these signs [occur]...: Understood as even if the signs that are characteristic for overfilling affecting the strength occur, it may be the case of

⁹⁹ Hippocrates, *Epidemics VI*, Section III, 17. (LCL 477: 230-231).

¹⁰⁰ Galen’s Commentary on Hippocrates’ *Humours*, 2.2 [16.219.9-220.3 Kühn].

¹⁰¹ Swain, p. 121.

¹⁰² Rufus, *Quaestiones*, §§28-33 (pp. 74-77).

¹⁰³ Mattern, p. 174.

¹⁰⁴ Galen, *Cur. Rat. Ven. Sect.*, p. 71.

overflowing relating to the vessels, and whether it is the first or the second, the two can be differentiated in the urine, pulse, and other things already mentioned.

3:8 **Yellowish green:** Ms. Escorial reads فجاجة, *fağāğā*, meaning acerbic, understood as yellowish green, as for an unripe fruit.¹⁰⁵ Iyōb Urhāyā: “Urine that resembles olive oil, combined with acute fever, is an indication of (looming) mental confusion and death, for it suggests that the intensity of the fever has consumed (most of) the moisture (in the body), to the point of melting the fat, in which case the brain dries out very much.”¹⁰⁶

3:9 **And both of these two [types of] overfillings impose and illness and require evacuation:** Galen: “Both kinds call for evacuation, whether they occur in a sick man or in one in health.”¹⁰⁷

3:11 **Raw humours:** “Crude or raw humour is material, derived from nutriment, that has not been properly cooked or concocted by the innate heat.”¹⁰⁸

And whenever one phlebotomises for these: Ms. Parma reads ואם יקיזו אותם אשר בזה ענינם *ve-im yakizū otam ašer beze inyanam*, understood as when one phlebotomises someone whose condition is like this, i.e., those whose bodies might contain raw humours.

Especially if it is summer: Ms. Escorial clearly reads “وخاصة إذا كان الوقت ضيقاً” *wa-hāṣṣatan idā kāna al-waqt ḍayyiqan* ‘if the time is limited’, but it is likely that ‘صيفاً’ *ṣayfan* ‘summer’ is meant, referring to warm weather, as in Galen’s own writings: “But where there is heavy oppression by plethos it is not always desirable to remove blood. It is possible for crude humour to collect in the body, in which event it is necessary to consider precisely, not only to what extent the faculties are in good condition, but also to what extent the humour has increased. For when the faculties have already been broken up by such conditions, they are liable, if phlebotomy is used, to sink to their last extremity, so that it is no longer possible to restore them. When this happens the danger is great, and particularly when, in warm weather, there is an attack of fever while the stomach is disordered, or when the whole body is by nature soft and damp in its temperament.”¹⁰⁹ Reading supported by Qustā ibn Lūqā, *Faṣd*.¹¹⁰

¹⁰⁵ Dozy, p. 242.

¹⁰⁶ Kahl, *Rhazes*, p. 298.

¹⁰⁷ Galen, *Cur. Rat. Ven. Sect.*, p. 71.

¹⁰⁸ Galen, *Cur. Rat. Ven. Sect.*, p. 76, footnote 29.

¹⁰⁹ Galen, *Cur. Rat. Ven. Sect.*, p. 76.

¹¹⁰ Qustā ibn Lūqā, *Faṣd*, p. 314.

3:12 **Stomachics:** الاسطماخيقتونات *al-ustumāḥīqūnāt*, compound purgative pills.

Prescription in the *index of prescriptions*.

Bitter hiera: *iyārağ fiqrā*, from the Greek ἰερά πικρά = bitteres Heiligmittel,¹¹¹ i.e., ‘divine bitter’,¹¹² ἰερά, a name for several medicines in the Greek pharmacological tradition, e.g., ἰερά πικρά.¹¹³ Prescription in the list of prescriptions. According to Sābūr ibn Sahl, it is “useful against headaches, moistness of the stomach, rheumatic pain, colic, vomiting that results from colic and moisture, hemiplegia, paralysis of the facial nerve, laxity of the organs, and dumbness”.¹¹⁴

Entering the bath: For more on bathing, see Galen, *Meth. Med. III, X* (LCL 518).

Moderate oils: Ms. Escorial reads only “moderate oils”. Ms. Parma adds

“משיחים עם השמנים הישרים”, “massage with moderate oils”. For more on rubbing and anointing with oils, see, e.g., Galen, *Meth. Med. III, XII*, chapter 3 (LCL 518). The rubbing can be moderate too, see Galen: “the rubbing is moderate in these cases so as to warm the body”.¹¹⁵

3:14 **Whoever has suffered from haemoptysis...:** Galen: “Those who have been temporarily cured by spitting blood, but nevertheless have a condition in the parts round the chest and lungs by a virtue of which, if a slightly increased amount of blood should accumulate in them, some vessel will again have its mouth forced open or be ruptured – these patients must be phlebotomised at the beginning of the spring, even if there are as yet no symptoms anywhere in the body.”¹¹⁶

3:15 **Likewise, for anyone...:** Galen: “it is better to phlebotomise in advance rather than wait for some clear sign of plethos to show itself.”¹¹⁷ In general, according to Qusṭā ibn Lūqā, one has to phlebotomise the patient before a severe illness is being generated, given that the symptoms of plethos suggest that one of the mentioned illnesses would befall.¹¹⁸

[Swollen] veins in the anus: Ms. Escorial reads “veins in the anus”, while Ms. Parma reads פתיחת הגידים ‘burst veins’ [in the anus].

Continuous and sanguine fevers: Maimonides in *Aphorisms 23*: ““Continuous” fevers and “perpetual” [fevers] are synonyms. Similarly, the [fever] called “synonchous” is continuous, as is the continuous burning [fever]. The term

¹¹¹ Fellmann, *Qalānisī*, p. 216.

¹¹² Kahl, *Sābūr*, p. 72.

¹¹³ Liddell & Scott, Vol I, p. 820.

¹¹⁴ Kahl, *Sābūr*, p. 72.

¹¹⁵ Galen, *Meth. Med. II, VII* 491K (LCL 517: 288-289).

¹¹⁶ Galen, *Cur. Rat. Ven. Sect.*, p. 77.

¹¹⁷ Galen, *Cur. Rat. Ven. Sect.*, p. 77.

¹¹⁸ Qusṭā ibn Lūqā, *Faṣd*, pp. 332-333.

“burning” has been given to it only because of severe heat.”¹¹⁹ According to Bos, blood fever is synochous fever.¹²⁰ See also Hippocrates in *Critical Days*: “About critical days, I have already spoken before. Fevers have their crises on the fourth day, the seventh, the eleventh, the fourteenth, the seventeenth, and the twenty-first; and subsequent to these acute diseases, on the thirtieth, the fortieth, and then the sixtieth. When it goes beyond these numbers, the state of the fevers is already chronic.”¹²¹

3:16 **Springtime**: Galen: “And as for those who go down every year in summer with plethoric diseases, they too should be evacuated at the onset of spring.”¹²² For more on the impact of seasons, see commentary for §8:2.

Purgation: This can be done in two manners, either *per os*, or *per rectum*. Galen: “This is also what we were taught from the position of the parts: to insert something *per rectum* for the intestines situated below and to give something from above (*per os*) for those structures above – the stomach itself, the spleen, and the esophagus.”¹²³ “Ulcers in the large intestines have a greater need for medications inserted *per rectum* because this is nearer. Ulcers in the small intestines need both because this is further on and is in the middle in terms of position for medication taken from above (*per os*) and inserted from below (*per rectum*).”¹²⁴

3:17 **One may also benefit from phlebotomy...:** Galen in *Cur. Rat. Ven. Sect.*: “Not only is phlebotomy of great benefit in the presence of plethos, either of the dynamic variety or of the kind known as plethos by filling, but it is useful also when inflammation is beginning in the absence of plethos, as a result either of a blow, or pain, or atony of the parts; for the pain attracts blood to it”.¹²⁵ Galen in *Meth. Med. III*: “Phlebotomy, since it does not dissipate the capacity, is not among those [treatments] directed against a symptom, but is one of those which eradicates the whole condition.”¹²⁶

Weakness of a part: Galen in *Meth. Med. III*: “I call a weak part either one that is very *dyskratic* in nature (for such parts are different in different ways), or one that has become *dyskratic* during some preceding disease, or one brought to a *dyskrasia* at the present time.”¹²⁷

4:2 **As to really knowing the quantity**: Galen: “Nothing shows so clearly that the medical art is in practice a matter of guesswork as the question of the amount of

¹¹⁹ Maimonides, *Aphorisms* 23, 30, p. 35.

¹²⁰ Maimonides, *Rules*, p. 15.

¹²¹ Hippocrates, *Critical Days*, 11 (LCL 509: 310-311).

¹²² Galen, *Cur. Rat. Ven. Sect.*, p. 88.

¹²³ Galen, *Meth. Med. II, XIII*, 922K (LCL 518: 390-391).

¹²⁴ Galen, *Meth. Med. I, IV*, 297K (LCL 516: 450-451).

¹²⁵ Galen, *Cur. Rat. Ven. Sect.*, p. 78.

¹²⁶ Galen, *Meth. Med. III, XII*, 819K (LCL 518: 238-239).

¹²⁷ Galen, *Meth. Med. III, XI*, 805K (LCL 518: 214-217).

each remedy. We often know exactly that the time for administering food or drink, whether cold or hot, is at hand; we cannot be sure, however, of how much we ought to give. It is the same with purgatives; we sometimes know for certain that a drug purging yellow bile, black bile, phlegm or serous superfluities should be given to the patient; yet we do not know with any certainty the amount that should be administered. A dose of such preparations cannot be corrected. Once the drug has been swallowed and has entered the belly it must of necessity all be digested; nor can one, if the patient has already been purged more than is desirable, remove any part of what has been administered. The greatest advantage of phlebotomy is that you can stop the evacuation when you wish, and afterwards at any time you choose allow it to flow again up to whatever quantity may seem good to you.”¹²⁸

4:3 When there is a lot of blood in the body...vital parts: Corresponds to overfilling relating to vessels; see commentary for §3:3. Galen: “For in those patients who appear to you to have a plethos of seething blood, you must try to evacuate it as quickly as possible, before it descends on some vital part”.¹²⁹ According to Temkin, the principal parts are “brain, heart, liver, and testes”.¹³⁰ For the dangers of too much blood in the body, see Qusṭā ibn Lūqā, *Faṣd*, pp. 304-305.

This fever, even if it was continuous...: Maimonides identifies four periods of illness: ¹³¹ “أوقات المرض الكلوية أربعة: ابتداء وتزايد وانتهاء وانحطاط.” Perhaps in Ms.

Escorial the words ‘rise’ and ‘increase’ are denoting the same period, in which case this number, four, would match. Otherwise the words in Ms. Escorial are identical: beginning, rise, increase, climax and decline ابتداء صعود تزايد انتهاء انحطاط *ibtidā’*, *ṣu’ūd*, *tazayyud*, *intihā’*, *inhiṭāt*.

4:4 Evacuation may [last] until unconsciousness takes place: Galen: “When, however, there is a plethos of seething blood, enkindling a very acute fever, there is need for copious evacuation. One must try to evacuate this blood to the point of fainting”.¹³²

The body becomes cold immediately after unconsciousness: “Venesection can extinguish the flame of continuous fevers, in which it is particularly useful if the veins are distended. It cools the body and abolishes or reduces the fever, particularly if pressed to the point of loss of consciousness.”¹³³

4:5 There is no limit...: See commentary for §2:18.

¹²⁸ Galen, *Cur. Rat. Ven. Sect.*, pp. 84-85.

¹²⁹ Galen, *Cur. Rat. Ven. Sect.*, p. 85.

¹³⁰ Temkin, p. 102.

¹³¹ Maimonides, *Aphorisms 11*, 1, p. 20.

¹³² Galen, *Cur. Rat. Ven. Sect.*, p. 85.

¹³³ Brain, p. 128.

4:6 **Examining the pulse:** Galen: “It is good, however, to pay attention to the diminution of the pulse, feeling it while the blood is still flowing, as is usually done in all patients who are being phlebotomised, so that you will never negligently cause your patient death instead of loss of consciousness, a thing I know has happened to three doctors.”¹³⁴

Examining the colour of blood: “It is often possible to judge it from a change in colour, which may be of two kinds: sometimes from the actual colour of the blood as it flows, sometimes from the colour of the patient’s complexion.”¹³⁵

4:7 **Whoever has a swelling...change:** Galen: “In patients who have a large inflammatory focus near the vein that has been opened, it is best to await a change both in the colour and in the consistency of the blood, as Hippocrates has also explained in his book *Regimen in Acute Diseases*, speaking of pleurisy.”¹³⁶ Hippocrates in *Regimen in Acute Diseases*: “Venesection, however, does not relieve the pain so well unless it extends to the collarbone. If the pain does not give way before the hot applications, do not continue them for long; continued heat dries the lungs and is apt to cause empyema. Should, however, the pain show signs of extending to the collarbone, or should there be a weight in the fore-arm, or in the region of the breast, or above the diaphragm, you must open the inner vein at the elbow, and do not hesitate to take away much blood until it flows much redder, or until it becomes livid instead of clear and red. Either of these may occur.”¹³⁷ The same is stated in Qusṭā ibn Lūqā, *Faṣd*, where Qusṭā refers to Hippocrates.¹³⁸

Henna: حناء, ḥinnā’, a reddish-orange colour.¹³⁹

4:9 **Continue until the blood changes:** Ms. Escorial offers an unidentified word that looks like زخير. Judging by the context it should be read as تغير, since the verb تغير has been mentioned several times in the chapter. This view is supported by Ms. Parma: “ההקזה לשריפת הדם אז צריך להגיע עד שישתנה מראהו”

“And if the phlebotomy is [conducted] for the combustion of blood, then one needs to reach the point where its colour changes.”

5:2 **The origin of pulsatile and non-pulsatile veins:** Hippocrates confirms that the origin of the pulsatile veins is the heart, and the origin of the non-pulsatile veins is the liver. See Hippocrates: “Root of veins, liver; root of arteries, heart.”¹⁴⁰

¹³⁴ Galen, *Cur. Rat. Ven. Sect.*, p. 86.

¹³⁵ Brain, p. 30.

¹³⁶ Galen, *Cur. Rat. Ven. Sect.*, p. 88.

¹³⁷ Hippocrates, *Regimen in Acute Diseases*, XXII (LCL 148: 80-81).

¹³⁸ Qusṭā ibn Lūqā, *Faṣd*, p. 358ff.

¹³⁹ Wehr, p. 244.

¹⁴⁰ Hippocrates, *Nutriments*, XXXI (LCL 147: 352-353).

Corresponds to al-Rāzī's *Kitāb al-Manṣūrī*: "The arteries arise from the left cavity of the heart."¹⁴¹ For a complete chapter on arteries, see al-Rāzī, *Kitāb al-Manṣūrī*, chapter 6 (pp. 42-47).

5:3 **Benefits**: Understood as "and the benefits of phlebotomising them".

I begin from the head: Arranging the diseases from head to foot, as seen in Ms. Escorial, was common for Graeco-Arabic medical literature.¹⁴²

5:4 **Four veins behind the ears**: Possibly posterior auricular vein, that is behind the ear, and superficial temporal vein, that is on the other side. The two connect above the ear.¹⁴³ Qustā ibn Lūqā mentions that phlebotomising the veins behind the ears are beneficial for treating vertigo, as well as other chronic illnesses in the head.¹⁴⁴

Leprosy: Ullmann¹⁴⁵ defines the Arabic term جذام *ğudām* as both leprosy and elephantiasis, yet in Ms. Escorial the latter is distinguished from leprosy by a different term, داء الفيل *dā' al-fīl*. For a broader discussion on this, see commentary for §12:7.

5:5 **Three veins that are arteries**: Ms. Escorial reads وثلاثة عروق في الشرايين *wa-talāṭat 'urūq fi l-šarānīn*, suggested correction وثلاثة عروق وهي شرايين *wa-talāṭat 'urūq wa-hiya šarāyīn*, 'three veins that are arteries', as stated in Ms. Parma:

"וג' גידים והם שריניים", "and three veins that are arteries". These are possibly anterior auricular arteries and posterior auricular artery, alternatively one of the anterior auricular arteries, posterior auricular artery, and superficial temporal artery.¹⁴⁶

Phlebotomising them is beneficial: Ms. Escorial reads وفصده نافع *wa-faṣduhu nāfi* 'phlebotomising it' in masculine singular, seemingly referring to the latest mentioned artery, i.e., the visible one. Ms. Parma reads ותועיל הקזתם *ve-to 'il haqazatam*, "phlebotomising them is beneficial", supporting the view that it is the question of all these three arteries. The reference to Hippocrates below supports the view that it is three arteries in question.

Whoever had these [veins] cut, will not procreate: Hippocrates talking about the Scythians: "They cure themselves in the following way. At the beginning of the

¹⁴¹ Al-Rāzī, *Kitāb al-Manṣūrī*, p. 42.

¹⁴² Perho, p. 63.

¹⁴³ Netter, plate 10.

¹⁴⁴ Qustā ibn Lūqā, *Faṣd*, pp. 401-402.

¹⁴⁵ Ullmann, *Islamic Medicine*, p. 88.

¹⁴⁶ Netter, plate 10.

disease they cut the vessel behind each ear. After the blood flows out, sleep comes over them from their weakness, and they go to bed. Later they wake up, some being cured and others not. Now, in my opinion, by this treatment their seed is destroyed; for by the side of the ear are vessels which, when someone cuts them, make the person cut sterile, and so I believe it is these vessels they are cutting.”¹⁴⁷ I have not been able to consult Galen’s commentary on the work in question. According to Nutton, the account of the infertility of the Scythians can be traced back to an eyewitness report, likely written by the author himself, and could potentially be explained by modern medical knowledge regarding the high iron content in certain local rivers.¹⁴⁸

5:6 Two veins in the back of the head near the hollow of the neck: Possibly occipital artery and occipital vein, or alternatively occipital vein, and mastoid emissary vein or meningeal branch of occipital artery.¹⁴⁹

The hollow of the neck: the Arabic word النقرة *al-nuqra* is translated both as ‘occiput’ and ‘nape of the neck’ by Spink and Lewis;¹⁵⁰ نقرة القفا *nuqrat al-qafā* as ‘hollow of the neck’ by Fonahn.¹⁵¹ When talking about cupping this region, Galen seems to use the term ‘occiput’.¹⁵²

Watery discharge: the term in Ms. Escorial, *badw al-mā*, occurs in Al-Rāzī’s *Kitāb al-Hāwī*, book II, chapter 5 both as *badw al-mā* and *bad’ al-mā*.¹⁵³ The *waw* here perhaps serves as a *kursī* for the *hamza*.¹⁵⁴ Johnston explains the term ‘discharge’ as “A disease of the eye causing continual watery discharge.”¹⁵⁵

Intiṣār: This term requires a thorough discussion. Both *intiṣār* and *intiṭār* appear in Ms. Escorial. Ullmann translates the Arabic term *intiṣār* as *Liderweiterung*.¹⁵⁶ The term is spelled as *intiṣār* in al-Rāzī’s *Kitāb al-Hāwī*, book II, ‘On the illnesses of the eye’.¹⁵⁷ However, in one instance, we find the term انتثار *intiṭār* with the following explanation:

¹⁴⁷ Hippocrates, *Airs, Waters, Places*, Chapter 22. (LCL 147: 132-133).

¹⁴⁸ Nutton, p. 76.

¹⁴⁹ Netter, plate 10.

¹⁵⁰ Albucasis, p. 656ff.

¹⁵¹ Fonahn, 103.

¹⁵² Galen, *Meth. Med. II, V, 6.*, 332K, LCL 517: 40-41 (pp. 40-41).

¹⁵³ Rhazes, *Hāwī II*, p. 168ff.

¹⁵⁴ See *The spelling of hamza* under *Principles of edition*.

¹⁵⁵ Galen, *Dis.*, p. 60.

¹⁵⁶ Ullmann, *Medizin*, p. 142.

¹⁵⁷ Rhazes, *Hāwī II*, p. 168 ff.

وأما انتشار الأشفار فضربان إما من رطوبة حادة يصير إليها كالحال في داء الثعلب وإما لعدم غذائها كالحال في الصلع وهذان لا حمرة ولا صلابة معهما في الأجناف ومنه نوع آخر يعرض معه غلظ الأجناف وحمرة وصلابة فيها.¹⁵⁸

“As for *intiṭār* [i.e., dispersal] of the palpebral margin, it is of two kinds: either due to acute moisture that reaches it as in the case of alopecia, or either due to the lack of its nutriment as in the case of baldness, and no redness nor hardness in the eyelids occurs with these two, and there is another type with which coarseness of the eyelids with redness and hardness occurs.”¹⁵⁹ This is very much similar to that described by Ḥunayn ibn Ishāq in his book *On the symptoms of eye-diseases*, where *intiṭār* is translated as ‘falling out of the lashes’, and two kinds are given: one with acrid moisture resulting in alopecia, in Greek *madarosis*; or the other accompanied by thickening, hardness and ulceration of the lids, in Greek *ptilosis*.¹⁶⁰ The ailment in question has other explanations too: “Al-intishār (synchysis, lit. ‘widening/extension’) of the eye is a dilation (*ittisā*) of the pupil (*ḥadaqa*). [...] In modern ophthalmology the term synchysis stands for an ailment of the vitreous body. This is in accordance with a definition in another writing by Galen. The Arabic term *intishār*, which was regularly defined as a dilation of the pupil, may also stand for other diseases of the eye with similar symptoms, such as amaurosis and mydriasis.”¹⁶¹ In *Aphorisms 23*, Maimonides defines *intiṣār* as follows: “The cataract that occurs in the eye and that the physicians call “extension” lies between the crystalline humor and the hornlike tunic.”¹⁶² In his book, *Amrād al-‘ayn wa ‘ilāgātuhā min kitābay al-Mu‘ālağāt al-Buqrāṭiyya wa Firdaws al-Ḥikma*, al-Ṭabarī explains *intiṣār* as *tawassu‘ al-ḥadaqa*, i.e., mydriasis, as the editors of the work in question have added.¹⁶³

5:7 **A vein in the forehead:** The frontal vein, *vena frontalis*.¹⁶⁴

Phlebotomising the branches of the frontal vein: Galen: “Similarly when a vein in the forehead is cut, heaviness of the head and pains that have become chronic as a result of plethos are usually noticeably relieved. [...] In the same way pains in the back of the head, whether incipient or already established, are relieved by cutting the vein in the forehead.”¹⁶⁵

¹⁵⁸ Rhazes, *Hāwī II*, p. 36.

¹⁵⁹ My translation.

¹⁶⁰ Ḥunayn ibn Ishāq, *Ashr maqālāt fī al-‘ayn*, Book 6, p. 61 - Arabic equivalent p. 133.

¹⁶¹ Ibn Ḡanāḥ II, pp. 785-786.

¹⁶² Maimonides, *Aphorisms 23*, p. 53.

¹⁶³ Al-Ṭabarī, *Amrād al-‘ayn*, p. 201. I would like to express my gratitude to Scarlett Wood for identifying this source.

¹⁶⁴ Fonahn, p. 76.

¹⁶⁵ Galen, *Cur. Rat. Ven. Sect.*, p. 94.

Phlebotomising the two is beneficial: Ms. Escorial reads وهي نافعة *wa-hiya nāfi‘a*, ‘they are beneficial’. It is mentioned that the branches are two, or sometimes more, and directly referred to in the dual form. Therefore, the suggested correction is وفسدهما نافع *wa-faṣduhumā nāfi‘*. Correction supported by Ms. Parma: “ותועיל הקזתם” *ve-to‘il haqazatam*, “phlebotomising them is beneficial” – Hebrew, with a more restricted usage of the dual form, uses the plural form.

5:8 Two curved veins in the temples: Probably the frontal branches of superficial temporal artery, or one branch of the superficial temporal artery and zygomaticoorbital artery.¹⁶⁶ Qusṭā ibn Lūqā mentions that the arteries in the temples shall be phlebotomised in case warm, fine matter is flowing into the eyes,¹⁶⁷ which corresponds to what al-Rāzī states in his *The Book of the Crown* (*Kitāb al-Iklīl*): “bleeding them is useful against a thin, hot residue inside the eye, and chronic headache”.¹⁶⁸

Phlebotomising the two is done by...: Cf. al-Rāzī, *Iklīl*: “in order to prevent unstoppable bleeding caused by a retraction of their two ends, these veins must only be punctured, and opened up with an arrowhead”¹⁶⁹.

5:9 Hot, fine, pricking matter in the membranes: What in Ms. Escorial is called ‘fine’, Galen calls ‘spirituous’. These, among many other medical statements found in Ms. Escorial, sound very much like Galen’s words: “These experiences persuaded me often to open arteries in the extremities of the limbs, and indeed in the head too, in the case of all pains that seemed to have their origin from a hot and spirituous quality, and particularly in the membranes. In these, the pain has a pricking quality and spreads out gently, since the pricking sensation is located in one part as if this were the centre of the affected region, and the whole part round this centre has a sensation of tension.”¹⁷⁰

5:10 Two veins in the canthi: i.e., inner corner of the eye, in singular *canthus*. By Spink and Lewis translated as ‘lachrymal veins’¹⁷¹. Galen: “So too cutting the vein alongside the greater canthus is good for the crusts on the eyes that remain after inflammations.”¹⁷²

¹⁶⁶ Netter, plate 10.

¹⁶⁷ Qusṭā ibn Lūqā, *Faṣd*, p. 401.

¹⁶⁸ Al-Rāzī, *Iklīl*, p. 143 (f. 30b).

¹⁶⁹ Al-Rāzī, *Iklīl*, p. 143 (f. 30b).

¹⁷⁰ Galen, *Cur. Rat. Ven. Sect.*, pp. 98-99.

¹⁷¹ Albucasis, p. 630.

¹⁷² Galen, *Cur. Rat. Ven. Sect.*, p. 94.

Ophthalmia: The Arabic word رمدة *ramad* is either ophthalmia, i.e., eye inflammation, or more specifically conjunctivitis, Bindehautentzündung.¹⁷³

Rhyas: Maimonides: “If the flesh in the inner angle of the eye disappears, it is an illness that is called *dam ‘a* [rhyas].”¹⁷⁴ The term ‘rhyades’ features in Galen, *Meth. Med. III*: “Also from this same class are the rhyades involving the greater canthus [of the eye] when the canthus is either reduced still more or destroyed altogether. When it is destroyed altogether, the disease becomes completely incurable; when it is reduced, it is treated by moderate astringents along with prior purging, first of the whole body and second of the head.”¹⁷⁵

5:11 **One vein in the tip of the nose:** Possibly external nasal artery or lateral nasal artery.¹⁷⁶

Congestion of blood, i.e., polyps and fissures, in them: Ms. Escorial reads

احتقان الدم فيها وفي البواسير والشقاق فيهما *iḥtiqān al-dam fihā wa-ḥi l-bawāsīr wa-l-ṣiqāq fihimā* ‘congestion of blood in it, and in haemorrhoids and fissures in the two’. Suggested correction احتقان الدم فيهما وهي النواسير والشقاق فيهما *iḥtiqān al-dam fihimā wa-ḥiya al-nawāsīr wa-l-ṣiqāq fihimā*.

‘congestion of blood in the two, i.e., polyps and fissures in the two’. This is due to the fact that the paragraph ends with “فيهما” in dual form, so it is possible to assume that it is the case for the previously mentioned instance also, explaining what is meant with the congestion of blood. On the other hand, al-Kindī writes in his *Aqrābādīn* about a prescription for “swelling of the lip and its lesions, for hemorrhoids, fistulas, scrofula, abscesses – all of them.”¹⁷⁷

Polyps: Ms. Escorial reads ‘haemorrhoids’, in Arabic *bāsūr*, in plural *bawāsīr*, in the nose, but probably what is meant is polyps, in Arabic *nāsūr*, in plural *nawāsīr*. Cf. Maimonides, *Aphorisms 23*: “The tumor that forms inside the nose as if it were a fleshy excrescence is called *nāṣūr* and also ‘polypus’.”¹⁷⁸ Lane mentions that ناسور, also ناصور, is “A certain disease that happens in the inner angles of the eyes, [...] with an incessant defluction therefrom: [...] and sometimes it happens also in the part around the anus: and in the gum: or it signifies also a certain disease in the part around the anus: and a certain disease in the gum”.¹⁷⁹ For the sake of clarity, I

¹⁷³ Ullmann, *Medizin*, p. 235.

¹⁷⁴ Maimonides, *Aphorisms 23*, 71, p. 55. The word ‘rhyas’ appears in brackets in the cited edition.

¹⁷⁵ Galen, *Meth. Med. III*, XIV 1002K (LCL 518: 508-511).

¹⁷⁶ Netter, plate 42.

¹⁷⁷ Al-Kindī, *Aqrābādīn*, 76, p. 94.

¹⁷⁸ Maimonides, *Aphorisms 23*, 74, p. 55.

¹⁷⁹ Lane 1893, p. 2790.

have chosen to limit the usage of *bāsūr* to haemorrhoids, and use the term *nāsūr* for polyps in this edition.

5:12 **Two veins inside the tongue:** possibly deep lingual artery and vein.¹⁸⁰ As to phlebotomising them, see Galen: “Parts in the region of the throat and trachea which are much inflamed are greatly benefited at the beginning by venesection at the elbow, but after the beginning by letting blood from the tongue; both the veins in it are cut.”¹⁸¹

5:13 **Two veins inside the chin:** Possibly lingual vein, one on each side.¹⁸²

...and the two begin from [the] inside: Ms. Escorial reads وهما السارين من داخل *wa-humā al-sārīyīn min dāḥil*, ‘and the two begin (gen./acc.) from [the] inside’, changed to وهما الساريان من داخل *wa-humā al-sārīyān min dāḥil*, ‘and the two begin (nom.) from the inside’. It is possible that what is meant is that the two are arteries from the inside (?), شريانان من الداخل *wa-humā širyānān min al-dāḥil*, in which case possibly the deep lingual artery and sublingual artery are meant. Had Ms. Escorial read only وهما شريانان, the sentence would have been clear: ‘and the two are arteries’, but due to the addition من داخل, it does not work linguistically: “and the two are arteries from [the] inside”.

5:14 **Jugular veins:** *vena jugularis interna*, and *vena jugularis externa*, discussed in Galen, *UP*, II, 436, p. 723.

5:15 **Two veins that are connected to the throat:** possibly common carotid arteries, *arteria carotis communis*, discussed in Galen, *UP*, II, 436, p. 723.

5:16 **axillary veins:** الإبطي *al-ibṭī*, axillary vein, that according to ‘Alī ibn al-‘Abbās is synonymous to basilic vein.¹⁸³ Possibly brachial artery, one in each arm, unless basilic vein running along the brachial artery is meant.¹⁸⁴ Galen suggests different veins to be cut, cf. Galen, *Meth. Med. III*: “So too is it better to open a vein if these parts are affected; the (humero-)cephalic vein in the arm or, if this is not visible, the median cubital [vein], and if the liver, thorax, lungs or heart [are involved], the inner (basilic) vein.”¹⁸⁵

5:17 **it is a Greek name:** It surely means ‘head’ in Greek: κεφαλή: head.¹⁸⁶

¹⁸⁰ Netter, plate 65.

¹⁸¹ Galen, *Cur. Rat. Ven. Sect.*, p. 94.

¹⁸² Netter, plate 70.

¹⁸³ Fonahn, p. 72.

¹⁸⁴ Netter, plate 419.

¹⁸⁵ Galen, *Meth. Med. III, XIII*, 904K (LCL 518: 362-363).

¹⁸⁶ Montanari, p. 1120.

What is above the jugular fossa: Since Ms. Escorial reads اللثة *al-liṭa*, ‘gums’, and in the following passage (5:18) اللية *al-liyya*, it is possible to think that one of the two words, if not both, are corrupt, and the word should be read as *al-labba*, i.e., the jugular fossa,¹⁸⁷ supported by Ms. Parma: לללבה, that in Ms. Parma occurs in both cases. In Qustā ibn Lūqā, *Faṣd*, the terms are دون الرقبة *dūn al-raḡaba* (below the neck) and فوق الرقبة *fawq al-raḡaba* (above the neck).¹⁸⁸ See also Galen:

“There are three ways on performing phlebotomy at the elbow: inner, outer, and middle. The inner is helpful for those who suffer from conditions of the lower part of the neck; the outer where parts above this, or the face or head, are involved.”¹⁸⁹

Because they ascend to it: Ms. Escorial reads لأنها مرتقي إليها *li-’annahu murtaqī ’ilayhā*, which sounds like the cephalic vein is located above the jugular fossa, head and face. Therefore, the suggested correction لأنها مرتقية إليه *li-’annahā murtaqiyya ’ilayhi*, since the mentioned parts are above the site of the basilic vein in the arm.

5:18 **Basilic vein:** in Ms. Escorial described as عرق البطن *’irq al-baṭn*, another name for *vena basilica*.¹⁹⁰

Riyāsa: The Greek term for basilic vein is derived from the Greek word *basilikos*, that translates to kingly, regal, royal.¹⁹¹

5:19 **Median cubital vein:** also known as median antebrachial vein.¹⁹² Galen: “The middle site sometimes has both the branching veins extending to the end of the arm, and uniting there, and sometimes running to unite quickly with each other at the bend of the elbow. Sometimes one of them is prominent, the other indistinct. When, therefore, the vein that ought to be used for the parts affected is indistinct, you may have recourse to one of the middle ones; try, for preference, to cut the one that branches from the proper vein.”¹⁹³

5:20 **Because it is thicker than the other:** Ms. Escorial includes several cases of بعد أن *ba ’da ’an*. In this case the juxtaposition is likely between an intended and unintended vein, i.e., cephalic vein for treating illnesses in the head, that is too thin

¹⁸⁷ Fonahn, p. 81.

¹⁸⁸ Qustā ibn Lūqā, *Faṣd*, p. 371.

¹⁸⁹ Galen, *Cur. Rat. Ven. Sect.*, p. 91.

¹⁹⁰ Fonahn, p. 75.

¹⁹¹ Montanari, p. 379.

¹⁹² Netter, plate 406.

¹⁹³ Galen, *Cur. Rat. Ven. Sect.*, p. 91.

to be phlebotomised, and thus, one should phlebotomise the median cubital vein, as it is fuller, or simply thicker, than the previously mentioned thin vein.

5:24 *Vena cephalica pollicis*: *ḥabl al-ḍirāʿ*, lit. ‘cord of the arm’,¹⁹⁴ in Latin *vena cephalica pollicis*, or *funis brachii*.¹⁹⁵ According to Lane “حبل الذراع is [a vein, or a nerve,] in the arm”.¹⁹⁶

A branch of the basilic vein: Possibly one of the intercapitular veins.¹⁹⁷

Phlebotomising it is beneficial ... spleen: Galen is more specific on which side to phlebotomise in order to treat the spleen and liver. Galen: “When the liver is starting to become inflamed, [cut] the veins in the right arm and, when the spleen is involved, the opposite (i.e. in the left arm).”¹⁹⁸

5:25 *Vena salvatella*: i.e., الأسيلم *al-usaylim*, the *vena salvatella*, which is a specific vein between the little finger and the ring finger. The word only occurs in the diminutive form.¹⁹⁹ Possibly one of the three intercapitular veins.²⁰⁰ The Arabic word surely is derived from the word *salāma*, which means soundness, safety, security,²⁰¹ as stated in Ms. Escorial. As to phlebotomising it, see Galen: “So also when the spleen is affected, incision of the vein in the ring finger of the left hand is of benefit, just as it would be if you were to cut the inner vein at the elbow; for evacuation of blood from the left hand helps a disordered spleen considerably.”²⁰² Qusṭā ibn Lūqā adds that phlebotomising the *vena salvatella* in the left hand is beneficial for pain in the spleen, while phlebotomising the same vein in the right hand is beneficial for pain in the liver.²⁰³

5:26 **Two veins in the popliteal fossae:** Possibly popliteal vein, one in each leg.²⁰⁴

Phlebotomising the veins in the popliteal fossae: Galen: “In respect to the kidneys, bladder, genitalia and uterus, [cut] those in the legs, especially those in relation to the popliteal fossa; if not, cut those beside the ankle.”²⁰⁵ Qusṭā ibn Lūqā mentions that phlebotomising the veins in the arm for problems of the uterus, on

¹⁹⁴ Albucasis, p. 651.

¹⁹⁵ Fonahn, p. 67.

¹⁹⁶ Lane, p. 505.

¹⁹⁷ Netter, plate 406.

¹⁹⁸ Galen, *Meth. Med. III*, XIII, 904K (LCL 518: 362-363).

¹⁹⁹ Lane, p. 1416.

²⁰⁰ Netter, plate 406.

²⁰¹ Wehr, p. 496.

²⁰² Galen, *Cur. Rat. Ven. Sect.*, p. 90.

²⁰³ Qusṭā ibn Lūqā, *Faṣd*, p. 369.

²⁰⁴ Netter, plate 475.

²⁰⁵ Galen, *Meth. Med. III*, XIII, 904K (LCL 518: 362-363).

the contrary, cause severe damage, as drawing the blood to the opposite direction causes the menstrual blood to be withheld.²⁰⁶

To urge on the menses: Galen: “When the menses are suppressed, however, those [veins] in the legs are invariably used.”²⁰⁷ See commentary for §14:9.

Chronic ulcers: Galen says doctors call these *kakoethical* ulcers. Galen: “It is not actually this chronicity itself, or being called and being chronic, which indicates the appropriate treatment, but from this [chronicity] it is possible to infer the bad state of the ulcerated part. [---] Chronicity in ulcers is, then, a sign of *kakochymia*. The discovery of what is useful is not, however, from the chronicity but from the *kakochymia*. Therefore, there are these three signs that follow each other: the sign, the condition, and the treatment. Chronicity is the sign, *kakochymia* is the condition, and the evacuation of the *kakochymia* is the treatment.”²⁰⁸

5:27 **Sciatic vein:** in Arabic عرق النَّسَا *irq al-nasā*,²⁰⁹ which Fonahn translates as “*vena saphena externa*, the external saphenous vein.”²¹⁰

Phlebotomising the sciatic vein at the malleoli: As seen throughout the manuscript, al-Rāzī often follows Galen’s thoughts word by word. In this case he seems to differ from Galen, as al-Rāzī seems to suggest phlebotomising the malleoli, while Galen has stated rather the contrary. Galen: “I have known diseases of the hip cured in one day by an evacuation through the legs; such of them, that is, as have not arisen as a result of cold, but through blood having collected in the veins in the ischial region. Hence phlebotomy from the ham is more effective than from the ankles in patients thus affected, and scarification brings them no obvious benefit.”²¹¹

5:28 **Saphenous vein:** *al-ṣāfīn*, i.e., *vena saphena*²¹², by which most likely the great saphenous vein, running along the inner side of the leg, is meant.²¹³

To urge on the menses: see commentary for §5:26 and §14:9. Specifically for the malleoli, see Galen: “By evacuations from the legs, however, it is possible not only to revulse, but also to urge on the menses. When you wish to achieve this at the time when the woman’s period is due, start about three or four days in advance by cutting a vein or scarifying the malleoli of one leg, and draw off a little blood; then on the next day evacuate in the same way from the other leg, at the same time

²⁰⁶ Qustā ibn Lūqā, *Faṣḍ*, pp. 377-378.

²⁰⁷ Galen, *Cur. Rat. Ven. Sect.*, p. 95.

²⁰⁸ Galen, *Meth. Med. I*, IV, 276K (LCL 516: 418-419).

²⁰⁹ Albucasis, p. 652.

²¹⁰ Fonahn, p. 76.

²¹¹ Galen, *Cur. Rat. Ven. Sect.*, pp. 93-94.

²¹² Fonahn, p. 130.

²¹³ Netter, plate 475.

prescribing a reducing diet for the days on which you evacuate thus, and in the four or five days preceding them.”²¹⁴

5:29 *Al-madaniyya*: i.e., Guinea worm. Cf. Ullmann, *Islamic medicine*: “Among the parasites, bilharziasis, intestinal roundworms, pineworms and Guinea worms (*al-‘irq al-madani*) were the most common.”²¹⁵ Cf. Ullmann, *Islamic medicine*: “... in the Arab authors the illness constantly bears the name *al-‘irq al-madani*, ‘The Medinan vein’ ... Their awareness that the illness is endemic in the Hejaz caused them to call this ‘vein’ ‘Medinan’. [...] However, ‘Abd-Allāh ibn-Yahyā, a doctor of the ninth century, goes beyond the ancient author when in his *Kitāb al-Ikhtisārāt* he writes that the Medinan vein occurs in hot countries and is the result of drinking bad water.”²¹⁶ For a full chapter on the treatment of Guinea worms, see Qustā ibn Lūqā’s *Medical Regime for the Pilgrims to Mecca, The Risāla fī tadbīr safar al-ḥaġġ*, edited with translation and commentary by Gerrit Bos (1992), and al-Rāzī, *Hāwī* XI, pp. 291-296.

6:2 **Danger in phlebotomising the pulsatile**: Galen: “Since, however, the arteries are hard to stanch, doctors do not dare to cut them, and where some, while performing phlebotomy, have inadvertently wounded an artery, they have had difficulty in stopping the haemorrhage. When they do the best they can, an aneurysm develops in the incision scar.”²¹⁷

6:3 **They are composed of two tunics, apart from the vein that nourishes the lung**: Galen: “It is perfectly evident to everyone that an arterial vessel cannot possible [sic] be derived from a venous one; for a vein has one tunic, and that a thin one, whereas the tunic of an artery is neither single nor so thin. It has, in fact, two tunics. The inner one is exceedingly thick, dense, and hard, and is divisible into transverse fibers; the outer one is soft, fine, and loose-textured, like that of a vein.”²¹⁸ Ms. Escorial reads “irrigates the lung”, understood as a vein that nourishes the lung, bringing nutriment to it, and what is meant with it is *arteria pulmonalis*, cf. Galen: “the vein that nourishes the lung itself [a. *pulmonalis*].”²¹⁹ Galen: “Now when Nature, who is wise in all things, interchanged the tunics of the pulmonary vessels, making the vein [a. *pulmonalis*] like an artery and the artery [v. *pulmonalis*] like a vein, she was not acting in any idle or haphazard manner, any more than she ever does in making any other structure in any animal. Though an artery may be similar to a vein in all its other parts, in the thickness of its tunics it is not the same. On the contrary, it is so different that Herophilus seems to have calculated correctly when he declared that an artery is six times as thick as a vein. Of all the instruments and parts the lung is the only one in which the artery has the

²¹⁴ Galen, *Cur. Rat. Ven. Sect.*, p. 93.

²¹⁵ Ullmann, *Islamic Medicine*, p. 1.

²¹⁶ Ullmann, *Islamic Medicine*, p. 82.

²¹⁷ Galen, *Cur. Rat. Ven. Sect.*, p. 97.

²¹⁸ Galen, *UP*, Sixth Book, p. 304.

²¹⁹ Galen, *UP*, Sixth Book, p. 303.

tunics of a vein and the vein those of an artery.”²²⁰ There is a reason why the ancients thought the aforementioned; cf. Hankinson: “the ancients, lacking the concept of circulation of blood, confused the pulmonary veins with the pulmonary arteries, hence the problem of accounting for why they resembled veins rather than arteries in the first place.”²²¹

6:4 It was shown to him in his sleep: Galen: “Urged by certain dreams I had, two of which were particularly vivid, I went for the artery in the space between the index finger and thumb of the right hand, and allowed the blood to flow until it stopped of its own accord, as the dream commanded. Not quite a pound escaped. Forthwith a long-standing pain was relieved which had oppressed chiefly the part where the liver meets the diaphragm. This happened to me in my youth.”²²² As seen earlier, dreams were considered highly beneficial in diagnostics, and Galen followed this too: “Like most people, Galen believed that the gods spoke in dreams and he followed their commands.”²²³

The pulsatile vein that is between the index finger and the thumb: Possibly radial artery or one of the two dorsal metacarpal arteries that flow between the index finger and the thumb.²²⁴

6:5-6:6 The best way of phlebotomising them...: Perhaps a continuation of an indirect Galenic quote that started in §6:4. Galen: “Even if the artery is larger, however, it will also cicatrise without an aneurysm if it is cut completely through, and this procedure also often prevents the danger of haemorrhage. It can be clearly seen that the whole artery is cut obliquely right through its whole substance, and the two parts are drawn up away from each other, the one above the site, the other below it. This also happens with veins, but only to a moderate degree, and always far more with arteries than with veins.”²²⁵

6:7 Rub: About rubbing, see Galen, *Hygiene*, Part II, 91K (LCL 535: 132-133ff.).

6:14 The cephalic vein...: Ms. Parma reads: אלקיפאל צריך להקייו ממקום העצל, “the cephalic vein should be phlebotomised from the site of the muscle”. Al-Rāzī, *Faṣḍ Alukah*, reads the same, yet *ḍayyiqan* is written as *ṣayfan*.

6:16 Better: Ms. Escorial: أكثر *aktar*, ‘more’; Ms. Parma: יותר טוב *yoter tov*, ‘better’.

6:19 ...and the like: Galen: “You must draw off and evacuate by phlebotomy the blood carried to the liver, incising the inner vein in the right antecubital fossa,

²²⁰ Galen, *UP*, Sixth Book, pp. 296-297.

²²¹ Hankinson, *Galen's theory of causation* in ANRW II 37:2 (1994), pp. 1757-1774, footnote 46.

²²² Galen, *Cur. Rat. Ven. Sect.*, p. 98.

²²³ Mattern, p. 38.

²²⁴ Netter, plate 459.

²²⁵ Galen, *Cur. Rat. Ven. Sect.*, p. 98.

since this is on a level and connects by a wide channel with the so-called [inferior] vena cava. If this [vein] is not visible, cut the medial vein, and if this is not visible, the remaining third vein.”²²⁶

6:20 **It is a nerval vein:** Ms. Escorial reads *فإنه عرق عصبي fa-innahu ‘irq ‘aṣabī*, “it is a nerval vein”, perhaps meaning that it is a vein adjacent to a nerve. There indeed are nerves both under and on the basilic vein: medial brachial cutaneous nerve with all its branches, and intercostobrachial nerve.²²⁷ Describing the basilic vein as *‘irq ‘aṣabī* appears also in al-Rāzī’s *Faṣd Alukah*, in which it is also mentioned that nerval veins can be identified by the touch under the finger. The method of treating it may be then described in §6:24.

6:21 **A fine scalpel that has a blade:** understood as a scalpel that has a sharp blade.

A scalpel with no blade: understood as a scalpel that has a blunt blade, that does not cut. Perhaps a similar, if not the same, tool that is featured in §6:19 as ‘crochet needle’. A variety of scalpels presented in Bliquez, *The Tools of Asclepius*, p. 72ff.

6:24 **If I want it to heal quickly:** It is possible that the phrase “if I want it to heal quickly” is copied twice by mistake. Perhaps what is intended is the following: phlebotomise lengthwise when the vein is between two nerves; widthwise when one wants it to heal quickly; and obliquely, that is the best option. On the other hand, the *ف + أما* construction is not present in the latter part, suggesting that there are two reasons: *وإذا كان بين عصبين* ‘and if it is between two nerves’. It may also be that something is missing. The three manners of phlebotomy are present in al-Rāzī, *Iklīl* as well: lengthwise as the most recommendable procedure; widthwise, possible for broad veins not overlying a nerve, very risky and requires caution; and crosswise, much less risky than cutting widthwise.²²⁸

Nerve spreading: Ms. Escorial reads *عصب مفروش ‘aṣab mafrūš*, translated as ‘expanded’, cf. Dozy: “*se dilater, occuper un plus grand espace*”.²²⁹

6:25 **Hot compress:** Cf. Maimonides, *Aphorisms 23*: “[The term] “hot compress” applies to everything that warms the body externally. There are five kinds of it: moist, dry, biting, intermediate, and moderate.”²³⁰

²²⁶ Galen, *Meth. Med. III*, XIII, 901K (LCL 518: 358-359).

²²⁷ Netter, plate 405.

²²⁸ Al-Rāzī, *Iklīl*, p. 145 (f. 31a).

²²⁹ Dozy, p. 253.

²³⁰ Maimonides, *Aphorisms 23, 33*, p. 37 (In Hippocratis De acutorum morborum [victu et] Galeni commentarius 2).

6:26 Be careful that no oil or anything that contains it touches the scalpel:

This is interesting, as Albucasis recommends the surgeon to wipe the scalpel with some olive oil.²³¹

6:30 لا مجاور: this seems to be deleted from Ms. Escorial by the copyist. If it was included in the text, perhaps it could be read as “a mistake in [phlebotomising] it causes a chronic damage to several faraway nerves”.

6:34 **When the illness is not visible to the eye:** An invisible swelling could refer to inflammations (see entry below). It is also possible that the negation here is a mistake, thus the passage should be read ‘when the illness is visible to the eye’, if a visible swelling is meant. Thus, it is worth taking a look at the term.

Swellings: Swelling, in Arabic ورم *waram*, that Galen at times refers to as ‘inflammation’. Galen: “Sometimes the plethos of blood, before it has begun to putrefy, arrives in force at some part, either mortifying it completely, so as to destroy its function, or doing it notable damage. The apoplexies originate in this way, by a concerted rush of a quantity of blood to the governing centre of the animal. Similarly, when it descends on some other part, it causes an abnormal swelling in it. Inflammation also comes from this sort of process.”²³² Galen: “For the Empiric it is enough to explain the symptoms of the affected part alone, speaking of it as an abnormal swelling which is resistant, painful, throbbing, tense, red and whatever such things, and they often assign one name to the whole collection for the sake of concise teaching, as in the case of what was previously mentioned – that is, inflammation.”²³³

And the reason for that: The Arabic word علة *illa*, can mean both ‘cause’ and ‘illness’. Due to the fact that Ms. Escorial uses another word for ‘cause’, namely سبب *sabab*, I have – in most cases – chosen to understand *illa* as ‘illness’.

However, in this specific passage, *illa* is understood as ‘reason’, since there is a logical thought process going on. As to the term ‘cause’, it seems that the words ‘cause’ and ‘disease’ for Galen are somewhat interchangeable, cf. Galen: “Thus at all events you will either say that the disease itself is the cause_A, or if the damage to the activity is actually the disease_E, the disposition which damages it will be the cause_A of the disease.”²³⁴ For more examples on this, see Galen, *Meth. Med. I*, book II (LCL 516).

²³¹ Albucasis, p. 642.

²³² Galen, *Cur. Rat. Ven. Sect.*, p. 73.

²³³ Galen, *Meth. Med. II*, VII 461K (LCL 517: 242-243).

²³⁴ Galen, *Meth. Med.* Hankinson, 1.7.1., p. 26 – _A stands for aition / aitia, _E for energeia / energesthai / energēma (ibid., p. xii).

7:8 **And the one who led to this [conclusion]...**: Corresponds to Galen, *Meth. Med. I*, in which Galen refers to Hippocrates in his work *On Wounds (Ulcers)*: “In every recent wound, other than in a body cavity, it is of benefit for blood to flow immediately from the wound more rather than less, for the wound itself and the surrounding parts become less inflamed. [...] Because of this, he was right to also add [the recommendation] to withdraw blood from chronic wounds. But if we have learned that from him in general – that is, when fluxes are beginning it is appropriate to draw them in the opposite direction, whereas when they are fixed in the affected part, it is appropriate to make the evacuation from the affected part itself, or those parts particularly close to it – we are now ready to draw a conclusion about the removal of blood. [This is that], in the beginning, it is appropriate to make the removal of blood from what is distant, but later from the wounded [parts] themselves.”²³⁵

7:9 **Deflection away from the affected site**: this is what is called revulsion or diversion. Galen: “Thus [the blood] is diverted to places nearby and is held back in places lying opposite – for example, diversion is through the nose for what is emptying out via the palate, while revulsion is downward, just as in fact for an emptying out via the anus, diversion is through the uterus whereas revulsion is upward.”²³⁶ Brain uses the term ‘derivation’ instead of diversion: “If bleeding from the mouth is brought to an end by a haemorrhage from the nose, this is derivation, since the flow is diverted to a nearby part; but if the haemorrhage that stops it is from the lower part of the body it is revulsion, since the part to which the blood is attracted is far from the site of the haemorrhage.”²³⁷

7:10 **Many disagreements concerning drawing matters may happen**: Understood as many physicians have differing opinions on how this should be done.

7:11...**so that the matter is drawn correctly**: *كَي تَتَجَذِبُ الْمَادَّةَ عَلَى اسْتِقَامَةٍ kay tatağaddab al-mādda ‘alā istiḳāma*, could also be understood as ‘so that the matter is drawn in an upright position’.

7:13 **Leech**: Albucasis: “Leeches are mostly used on those parts of the body to which application of cupping-vessels is impossible, either because of their smallness, such as the lips, the gums, and so on; or because the part is bare of flesh, like the finger, the nose, and so on.”²³⁸ Several kinds of leeches described by Indian authors in Sanskrit sources in Rhazes’ *Comprehensive Book*.²³⁹ As to the

²³⁵ Galen, *Meth. Med. I*, IV, 293K-294K (LCL 516: 444-447).

²³⁶ Galen, *Meth. Med. II*, V, 16. (LCL 517: 16-17).

²³⁷ Brain, pp. 129-130.

²³⁸ Albucasis, p. 674.

²³⁹ Kahl, *Rhazes*, pp. 78-83.

application of leeches, see *Albucasis on Surgery and Instruments*, chapter 97 ‘On the application of leeches’.²⁴⁰

7:16 The drugs that are put in the nose: Apparently al-Rāzī both treated the patient with these drugs known for being useless and also phlebotomised her. It seems to be a general view that these drugs are of little worth. Galen: “When we do this, as you know, we invariably check the haemorrhage from the nostrils, in spite of having previously tried the drugs recommended in the literature for stuffing up the nose and rubbing on the forehead, and found them all ineffective.”²⁴¹ A few prescriptions for drugs used for treating epistaxis are presented in the *index of prescriptions* in this book.

The both sides in the cephalic vein: Corresponds to Galen: “You ought not to despise phlebotomy as a revulsive remedy, since you have often seen me, when there is a copious haemorrhage from the nostrils, making use of the remedy and stanching the flow forthwith. It is expedient, then, as you have seen, not to delay until the patient’s strength has reached the last stages of collapse, but, when it appears that the appropriate amount has been evacuated, and the force of the rush of blood continues strong, to cut a vein at the elbow, in the right arm if the right nostril is bleeding, in the other side for the left one.”²⁴² The same thought features even in Galen’s *Meth. Med. II*: “If the patient is still not relieved, it is necessary to cut a vein in the antecubital fossa on the side of the hemorrhage, drawing off a little blood, and then, after an interval of one hour, drawing it again, then repeatedly, according to the capacity of the patient.”²⁴³

8:2 The best time for extracting blood is the spring: See commentary for §1:2.

8:3 Hot disposition...hurry up to phlebotomise him: This logic may be related to what al-Rāzī, according to Ibn Abī Uṣaybi‘a, has said about hot illnesses: “Hot illnesses are deadlier than the cold ones due to the speed of the movement of fire.”²⁴⁴

8:4 Proper place: i.e., chapters 10 and 11 in Ms. Escorial.

8:6 Whoever is cautious: understood as someone who is cautious about keeping a strict diet.

8:8 [when a surplus of semen] has collected: Most likely something is missing in this passage. Ms. Parma supports a different reading, as it says:

“וימנע מהמשגל רק בעת התשוקה החזקה כי הוא יתרון הזרע המקובץ ויציאתו יותר טובה”
“And he should avoid coitus [and practice it] only at the time of

²⁴⁰ Albucasis, p. 674.

²⁴¹ Galen, *Cur. Rat. Ven. Sect.*, p. 84.

²⁴² Galen, *Cur. Rat. Ven. Sect.*, p. 84.

²⁴³ Galen, *Meth. Med. II*, V, 316K (LCL 517: 16-19).

²⁴⁴ Ibn Abī Uṣaybi‘a, *Ṭabaqāt*, p. 761, my translation.

strong sexual desire, because that is the benefit of the collected semen, and getting it out is a lot better than allowing it to rest.” Allowing the semen to exit the body will bring relief, concisely concluded as “Comfort comes from ejaculation.”²⁴⁵ Already Aristotle dealt with this matter: “Why are the melancholic highly sexual? Is it because they are full of *pneuma*, and the seed is an exiting of *pneuma*? Therefore, those in whom there is a lot of this material must necessarily often desire to purge themselves; for they are thereby relieved.”²⁴⁶ The topic is discussed in Galen, *De locis affectis*.²⁴⁷

8:9 **Coitus:** Al-Rāzī himself was rather strongly against coitus, as can be understood from his book *The Spiritual Physick of Rhazes*. He had even dedicated some time to compose a work *On Sexual Intercourse, its Harmful and Beneficial Effects, and Treatment*.²⁴⁸ For more, see Rhazes, *Spiritual Physick*, pp. 83-84. See also commentary for §8:8.

Full of food: Cf. Maimonides, *Aphorisms 12*: “Beware of letting blood while food is still present in the stomach and as long as the humors in the stomach and first [nonpulsatile] vessels are not [completely] cocted.”²⁴⁹

Hotter or colder than customary: Qusṭā ibn Lūqā mentions that the parts can become hot or cold either due to the increase of hot or cold humours, or due to dyscrasia.²⁵⁰

Drunk: “Drunken and intemperate people, however, accumulate an excess of undigested humours, and do not benefit from such treatment [i.e. venesection or purgation]; the physician should not undertake the management of such patients.”²⁵¹

Raw humours: Cf. Maimonides, *Rules*: “If the body contains a very raw humor, do not even consider bleeding, lest the innate heat become too weak to concoct [the humor].”²⁵² See also commentary for §3:11.

8:11: **Day or night:** Corresponds to Galen: “you will not shrink from sometimes opening a vein even during the night.”²⁵³

8:12 **If you see the blood black and slightly foamy:** Corresponds to Galen talking about quartan fevers: “And if, when you open a vein, the flow is black and thick, which is the kind of thing you find particularly in those who are splenic,

²⁴⁵ Swain, p. 120.

²⁴⁶ Aristotle, *Problems IV*, 30 (LCL 316: 172-173).

²⁴⁷ Galen, *De locis affectis*, Book VI, 417-421, pp. 184-185.

²⁴⁸ Pormann & Savage-Smith, p. 49.

²⁴⁹ Maimonides, *Aphorisms 12*, 25, p. 34.

²⁵⁰ Qusṭā ibn Lūqā, *Faṣḍ*, p. 299.

²⁵¹ Brain, p. 132.

²⁵² Maimonides, *Rules*, 23, p. 10.

²⁵³ Galen, *Cur. Rat. Ven. Sect.*, p. 86.

be confident about the purging. However, if it appears yellow and thin, stop immediately.”²⁵⁴

8:14 Hippocrates...eighth day of his illness: Corresponds to Hippocrates in *Epidemics III*, in which he talks about a patient with acute fever: “Eighth day. I bled him in the elbow. There was an abundant, proper flow of blood: the pains were relieved, although the dry coughing persisted.”²⁵⁵

8:15 Phlebotomy on the twentieth day: Corresponds to Galen: “For on whatever day you observe the indications for phlebotomy in the patient, on that day you will apply the remedy, even if it is the twentieth day from the onset. And what are the indications? The disease severe; strength of the faculties; except in the stage of childhood, and when the ambient air is very hot. Since, in most diseases, the patient’s strength will already have been diminished with the passage of time, the opportunity for phlebotomy is lost because of the number of days that have elapsed; this, however, is not a primary effect, but is due to the intervention of another factor, namely the antecedent dissolution of the faculties. Hence, if even on the second day after the onset the powers should appear to be dissolved, we shall refrain from phlebotomy.”²⁵⁶

9:2 & 9:3 Whoever is phlebotomised...: The principles of epaphairesis confirmed by Galen: “As for the time for epaphairesis, in those patients in whom we decide simply to evacuate, this should take place on the same day; but for those who are revulsed, it is better that it should be done on two successive days. You should monitor the strength of the patient in all such cases, by feeling his pulse, since some patients are sensitive where strength is concerned, so that they cannot bear copious evacuation. In such cases, the patient should be allowed to recover on the first day, and epaphairesis should be performed on the second.”²⁵⁷

9:7 Madīnat al-Salām: مدينة السلام, a sobriquet for Baghdad.²⁵⁸

9:8 Al-Ma’ mūn: Al-Ma’ mūn, ‘Abdullāh bin Hārūn al-Rašīd, (d. 833) who was “an Abbasid Caliph under whose patronage of the arts and science *Bayt al-Hikma* ‘house of wisdom’ was founded.”²⁵⁹

9:10 Pulse: Usually in this edition I have translated the word ضربة *darba*, as ‘blow’, a physical affection, but in this case the word is understood as beat, i.e., heartbeat. How does Galen see physical affections? Galen: “Sometimes the term *helkos* (wound, ulcer) is used, sometimes *trauma* (wound, trauma), and sometimes

²⁵⁴ Galen, *Meth. Med. G*, Book I, 12, 38K (LCL 523: 392-393).

²⁵⁵ Hippocrates, *Epidemics III*, 8 (LCL 147: 268-269).

²⁵⁶ Galen, *Cur. Rat. Ven. Sect.*, p. 96.

²⁵⁷ Galen, *Cur. Rat. Ven. Sect.*, p. 97.

²⁵⁸ Wehr, p. 496.

²⁵⁹ Nasrallah, p. 534.

rhexis (rupture). But what I have often said is that we must give little thought to names so that we may hasten to discover the knowledge of the matters themselves. Let us press toward this, paying scant attention to names because patients are benefited not by the precise application of names, but by the appropriate remedies.”²⁶⁰ The term ‘blow’ features even in other translations of Galenic texts; see commentary for §3:17.

10:2 High ceiling: The Arabic word in Ms. Escorial is an unidentified word that looks like *al-ḥrk* *الـحـرك*, resulting in *rafi‘ al-ḥrk* رفيع الحرك. Ms Parma reads עליון התקרה *‘elion ha-tiqra*, ‘high ceiling’. The expected Arabic words, *saqf* and *sath*, do not match the writing.

Fragrant herbs: Albucasis: “There should also be in the place where he is sitting such things as are customary for men to enjoy, such as various perfumes, aromatics, and music, and the like, as each one may.”²⁶¹ In general, the atmosphere should be pleasant and relaxed, as discussed in chapter 95 in *Albucasis On Surgery and Instruments*.²⁶²

10:3 Oxymel: A syrup prepared of vinegar and honey or sugar, beneficial for its cooling effects.²⁶³ For its uses, see e.g., Hippocrates, *Regimen in Acute Diseases* (LCL 148), LVIII. ff. (p. 112ff.). For more, see list of prescriptions and index of *materia medica*.

Julep: A syrup prepared of rose water and sugar or honey, served as a refreshing drink either diluted in water or served on ice, known for its cooling effects.²⁶⁴ For more, see list of prescriptions and index of *materia medica*.

Soft-boiled eggs: The Arabic term for soft-cooked eggs is *al-bayḍ al-nīmbarišt*.²⁶⁵ According to Galen, soft-boiled eggs provide the best nutriment to the body, compared to other means of preparation.²⁶⁶

10:4 The food should consist of dishes made from kid, sheep, or soured pullets: Galen regards the meat of both goats and sheep as unwholesome due to the humours and residues they produce, but, when they grow up eating food from the soil or trees, they become more suitable for human consumption. Hence, sheep are the best during early and mid-spring, and goats in the early and mid-summer. Galen sees pork meat as the superior, most nutritious of all foods.²⁶⁷ It is understandable that pork is not included in Ms. Escorial due to the influence of

²⁶⁰ Galen, *Meth. Med. II*, VI, 385K (LCL 517: 120-121).

²⁶¹ Albucasis, p. 642.

²⁶² Albucasis, p. 642.

²⁶³ Nasrallah, p. 555.

²⁶⁴ Nasrallah, p. 552.

²⁶⁵ Nasrallah, p. 830.

²⁶⁶ Galen, *Alim. Fac.*, III:21 (p. 134).

²⁶⁷ Galen, *Alim. Fac.*, III:1 (pp. 114-115).

Islam. See also commentary for §2:35. As to pullets, al-Isrāʿīlī states that their meat is the finest among domesticated birds, as it is compatible with all temperaments, digests quickly, and generates good humours.²⁶⁸ However, Galen regards all winged animals as poorly nutritious, especially when compared to pigs, yet their meat is easier to concoct.²⁶⁹ For more on the meat of terrestrial animals, see Galen, *Alim. Fac.*, III, entries 1-13 (pp. 114-123).

Sikbāğ, hişrimiyya, rummāniyya, zīrbāğā, and isfīdbāğ: The dishes mentioned in this paragraph are all sour. Sour stews are generally considered appropriate for people with hot temperaments, while those who have a cold temperament are recommended to consume white, simple stews, such as *isfīdbāğ*, and desserts prepared with honey after consuming sour stews, in order to balance their cold properties.²⁷⁰ *Sikbāğ* is a stew mainly cooked with beef, soured with vinegar;²⁷¹ *hişrimiyya* a stew that is soured with juice of unripe grapes;²⁷² *rummāniyya* a stew made of pomegranate and chicken;²⁷³ *zīrbāğā* a delicate stew made of birds, lightly seasoned, and soured with vinegar and balanced with sugar, praised by many for its perfectly balanced properties,²⁷⁴ and *isfīdbāğ* a white dish, notorious for being a balanced dish fit for all.²⁷⁵

10:8 **Melicratum:** Cf. Riddle, *Dio. Pharm. Med.*: “Very popular as a drink and as a medicine in antiquity was melicraton, or water mead (V. 9). This was a mixture of honey and water allowed to ferment. Among its usages was one for coughs.”²⁷⁶ It is synonymous to hydromel, a mixture of honey and water.²⁷⁷ For Hippocrates on hydromel, see Hippocrates, *Regimen in Acute Diseases* (LCL 148), LIII. ff. (p. 108ff.).

10:9 **Animal faculty:** One of the three central faculties. “There are three basic faculties: 1) the natural faculties (*al-quwā at-tabīʿiyya*) are the effects of nature which manifest themselves in conception, growth and nourishment; 2) the animal faculties (*al-quwā al-ḥayawāniyya*) ensure life; they manifest themselves in the systole and diastole of the heart and arteries; 3) the psychical faculties determine the reason, the power of discernment, emotion and voluntary movement.”²⁷⁸

²⁶⁸ Nasrallah, p. 724.

²⁶⁹ Galen, *Alim. Fac.*, III:18 (pp. 131-132).

²⁷⁰ Nasrallah, p. 607.

²⁷¹ Nasrallah, p. 617.

²⁷² Nasrallah, p. 607.

²⁷³ Nasrallah, p. 614.

²⁷⁴ Nasrallah, p. 620.

²⁷⁵ Nasrallah, p. 608.

²⁷⁶ Riddle, *Dio. Pharm. Med.*, p. 144.

²⁷⁷ Montanari, p. 1305.

²⁷⁸ Ullmann, *Islamic Medicine*, p. 60.

some people have claimed...: Ms. Escorial reads وقد زعم قوم أن الغشي يعرض الأسباب, “some people have claimed that unconsciousness demonstrates [missing preposition] the causes”, the beginning of the word الأسباب being written as the last word of one line, containing only لا, and the following line beginning with سباب. The definite article does not naturally go together with the *tanwīn* with *kasra*. Therefore, the suggested correction is وقد زعم قوم أن الغشي يعرض لأسباب *wa-qad za‘ama quwam anna al-ḡašī ya‘riḍ li-asbāb* “some people have claimed that unconsciousness occurs due to causes”.

10:10 Mouth of the belly: As seen in the commentary for §2:2 and §3:3, Galen uses the word “mouth of the belly”. It is worth looking into the term a bit closer. Powell (2003) says: “*stomachos* - στόμαχος. In his *On the Use of the Parts* Galen tells us that this word can refer to any narrow passage leading to a cavity, but that in the alimentary tract it was ‘the common name’ (*to koinon onoma*) for ‘the thoroughfare’ that passed from mouth to stomach, which was called, more specifically, the *oisophagos*. Chantraine thought that in Homeric times *stomachos* meant throat, but that in the Hippocratic *Sacred Disease* it had come to mean the entrance of the stomach, the phrase in question being *tou stomachou tēs gastros*. [...] Closer in time to Galen, Rufus of Ephesus quite explicitly refers to the *stomachos* as the means by which food and drink pass to the stomach; and in another passage he suggests that the term includes the upper portion, at least, of the stomach, that is, our gastric cardia.”²⁷⁹

A humour has flowed into the stomach: This seems to be what Galen calls *dyskrasia* of the stomach, and its treatment is discussed in detail for example in Galen, *Meth. Med. II, VII*, Chapters 8-10, 503K-511K (LCL 517: 306-317).

Thus, he should regain consciousness: The style of the author seems to be to express conditional cases in the way seen at the end of this passage: فإن أفاق وإلا *fā-in afāqa wa-illā*, that leaves room for interpretation. It would be helpful if the author expressed himself for example by saying: فإن أفاق جيداً وإلا: ‘and if he wakes up, that it good, otherwise...’, or if a suffix was added: فإنه أفاق: ‘and he should wake up’. Since this manner of فإن + verb followed by وإلا is seen throughout the manuscript, I have chosen to respect the style of writing without altering the text, and translate as appropriate.

²⁷⁹ Galen, *Alim. Fac.*, pp. 23-24.

10:11 **Otherwise...**: Treatment with fragrances and musical instruments, that are used to strengthen the animal faculty, are described in detail in Maimonides, *On the Regimen of Health*.²⁸⁰

Ġāliyya: A men's perfume that comes in various types, the basic components of which are musk, ambergris, and balsam oil.²⁸¹ For its preparation, see al-Kindī, *KK*, pp. 56-57.

Mudaqqaqāt, ṭabāhiḡāt, muṭaḡḡanāt, laqāniq: *Mudaqqaqāt* is spicy, ground meat cooked into casserole-like dishes;²⁸² *ṭabāhiḡāt*, a dish made of red meat, seasoned with spices and herbs;²⁸³ *muṭaḡḡanāt*, dish made of poultry, seasoned with spices and herbs;²⁸⁴ and *laqāniq*, small, spicy sausages.²⁸⁵

Spices: The Arabic term بزور *buzūr*, in singular *bizr* or *bazr*, can stand for 'seed', or even oil made of seeds,²⁸⁶ alternatively 'spices'.²⁸⁷ In the context of this passage most likely spices are meant.

10:14 **Grape jelly**: The Arabic term, 'aqīd al-*inab*, is most likely an Arabised version of what Galen refers to as 'inpissated must', or 'grape jelly'.²⁸⁸

11:1 **Foods**: In general, al-Rāzī reckons the role of food and diet important. He said: "If a wise man is able to treat [a patient] with foods, without drugs, he achieves bliss."²⁸⁹

11:2 **Fatigue**: Cf. Maimonides, *Rules*: "When the body of the patient is weak, when he suffers from indigestion, or when his body contains a crude humor that has not concocted, one should not bleed [that patient]."²⁹⁰

11:3 **Qūqāyā pill**: In *Meth. Med. II*, Galen describes this as "our own little pills compounded from aloes, scammony, colocynth, agaric, bdellium and gum arabic",²⁹¹ while in *Meth. Med. III*, where the story of the man with the swollen tongue can be found as well, Galen refers "the customary little pills which I

²⁸⁰ Maimonides, *RH*, p. 84.

²⁸¹ Nasrallah, p. 770.

²⁸² Nasrallah, p. 611.

²⁸³ Nasrallah, pp. 617-618.

²⁸⁴ Nasrallah, p. 612.

²⁸⁵ Nasrallah, p. 610.

²⁸⁶ Ibn Ġanāḡ I, p. 338.

²⁸⁷ Dozy, p. 81.

²⁸⁸ Ibn Ġanāḡ I, no. 566 (p. 429). The Arabic word عقييد, 'aqīd, stands for a beverage prepared by evaporating the serous part of milk; the residue is formed into cakes or pieces with the hand, and spread on a horsehair sack to dry (Dozy, p. 151).

²⁸⁹ Ibn Abī Uṣaybi'a, *Ṭabaqāt*, p. 774, my translation.

²⁹⁰ Maimonides, *Rules*, 38, p. 17.

²⁹¹ Galen, *Meth. Med. II*, V, 15, 374K (LCL 517: 104-105).

compound from aloes, scammony and colocynth”.²⁹² For a full prescription, see the chapter *Prescriptions*.

...thus, I purged him with a *qūqāyā* pill in the evening: According to Galen himself, he advised to use a cooling agent as the first measure, while purgative pills (in Ms. Escorial: a *qūqāyā* pill) to be given towards the evening was a secondary measure, but the other physician wanted to use purgative pills instead. Galen’s preferred treatment was later supported by a dream that the other physician had, and the patient was successfully treated with lettuce juice. Cf. Galen: “I have in fact seen a tongue so swollen that it could not be contained in the mouth of the person – someone aged sixty who had never been phlebotomized. It was almost the tenth hour of the day when I first saw him, and he seemed to me to be someone who must be purged with the customary little pills which I compound from aloes, scammony and colocynth, the medication being given toward evening. However, I advised that one of the cooling [agents] be placed on the affected part itself as the first measure. Later, I said, we will adapt according to what happens. But to one of the doctors this did not seem good and because of this, the patient took some of the little pills. Consideration of the topical medication was put off to the next day when he hoped something which was tried might be effective after prior to evacuation of the whole body and a revulsion downward had occurred. However, during the night, a very clear dream appeared to him, which approved my advice and determined the material of the medication, ordering a thorough washing with the juice of lettuce. And certainly, when he used this alone, the man benefited completely so as to no longer need anything else.”²⁹³ Misunderstanding may also be caused by Galen’s verbosity and long-windedness; that, combined with the depth of the thought and uncertainty of the text, may have led to misinterpretations.²⁹⁴ Being criticised for his verbosity, Galen seemingly replied by writing: “I should not be accused of the fact that my lectures are too long. It is the fault of those who write books full of erroneous arguments.”²⁹⁵

11:4 Syrup of the two pomegranates: What is meant by this is both sweet (*ḥulw*) and sour (*ḥāmid*) pomegranates.²⁹⁶

Sucking the honey-like, shiny pod of cassia fistula: Ms. Escorial reads امتصاص

فلوس الخيار شنبّر العسلي البراق, *imtiṣāṣ fulūs al-ḥiyāršanbar al-‘asalī al-barrāq*, lit.

‘sucking the honey-coloured, shiny coins/scales of cassia fistula’. According to Encyclopædia Iranica the Arabic term *folūs* refers to thin, woody partitions of the pod. The term *folūs*, from *folūs-e ḥiyār(-e) čanbar*, “the septa of the cassia fistula”

²⁹² Galen, *Meth. Med. III*, XIV, 8, 971K (LCL 518: 464-465).

²⁹³ Galen, *Meth. Med. III*, XIV, 8, 971K-972K (LCL 518: 462-465).

²⁹⁴ Temkin, p. 67.

²⁹⁵ Siegel, p. 11.

²⁹⁶ Ibn al-Gazzār, *Zād al-Musāfir*, I.10.4 no: 174 (p. 107).

has replaced the term for cassia fistula in Persian. *Folūs* can even mean the pod of cassia fistula, and *mağz-e folūs* “the pith of folūs”, meaning the pulp. Encyclopædia Iranica also mentions that a cassia fistula with a thinner peel, with a thick, dark and glossy pod has the best medical properties.²⁹⁷ It could also be that the cassia fistula should be soaked in one of the previously mentioned syrups.

11:6 **Muzawwarāt** are vegetarian dishes, lighter than meat dishes and easier to digest.²⁹⁸ The dishes listed here, ‘*adasiyya*, *hişrimiyya*, *summāqiyya*, and *rummāniyya*, are known as dishes containing meat. As we are talking about *muzawwarāt*, vegetarian dishes, most likely these are vegetarian versions of the dishes known as dishes with meat. With *sikbāğ*, that also is a dish containing beef, this is evident, as Ms. Escorial reads “of fresh fish the small prepared as *sikbāğ*”.

Sandalwood and rose water: Sandalwood and roses appear as common ingredients in poultices for liver and spleen in al-Kindī, *Aqrābādīn*.²⁹⁹

11:8 **Tamarind:** Maimonides in *On the Regimen of Health*: “Abū Marwān ibn Zuhr – may God have mercy with him – has said that the best thing for softening the stools is an infusion of rhubarb with tamarind.”³⁰⁰ As to rhubarb, see commentary for §11:14.

Coriander: The term كزبرة *kuzbura* means both coriander and its seed.³⁰¹ It is not specified in the prescription which one should be used.

Half a raṭl of water: The prescription does not mention more than half a *raṭl* of water as a part of the concoction. Most apparently the ingredients shall be cooked in a larger amount of water as the water is supposed to turn red and the concoction thicker before adding the additional half a *raṭl* of water.

11:10 **Pith of cassia fistula:** Ms. Escorial reads لب خيارشنبر فارسي قصبی *lubb ḥiyāršanbar fārisī qaşabī*, ‘stalky kernel of Persian cassia fistula’. Possibly the author, or al-Rāzī while dictating, has simply added that *ḥiyāršanbar* is a Persian name, as the Arabic term is derived from the Persian *khiyār-čanbar*: *khiyār*, ‘cucumber’, and *čanbar*, ‘circle’, ‘collar’, ‘necklace’, since, according to *Encyclopædia Iranica* the plant does not grow in Persia.³⁰² See also commentary for §11:4.

²⁹⁷ Encyclopædia Iranica, <https://iranicaonline.org/articles/cassia-a-genus-of-shrubs-and-trees-of-the-family-leguminosae>, accessed on June 22nd 2022.

²⁹⁸ Nasrallah, p. 433.

²⁹⁹ Al-Kindī, *Aqrābādīn*.

³⁰⁰ Maimonides, *RH*, p. 88.

³⁰¹ Ibn Ġanāḥ I, p. 375.

³⁰² Encyclopædia Iranica, <https://iranicaonline.org/articles/cassia-a-genus-of-shrubs-and-trees-of-the-family-leguminosae>, accessed on June 22nd 2022.

11:11 **Barley broth cooked with peeled lentils:** Galen: “barley is not only far from warming (such as some foods are betwixt warming and cooling, such as starch and light bread) but it actually seems to be cooling in every way it is used”.³⁰³ As to lentils cooked with barley, Galen says it is best to mix lentils with less ptisane (i.e., barley gruel) for the best result.³⁰⁴

11:12 **The prescription of barley broth:** The prescription of barley broth, as it appears in the manuscript, seems to be incomplete. For a suggestion of a prescription of barley broth, see the *list of prescriptions*.

Peculiar virtue: خاصية, ḥāṣṣiyya, is a term for “[a property, or particular or peculiar virtue, which is] an unknown cause of a known effect; as that by which a medicine operates: the former differs from the latter in being conventionally applied to an effect, [or effective property,] whether the cause of its existence be known or not”.³⁰⁵

Hot and dry in the second degree: One of Galen’s contributions to pharmacology was the classification of drugs into different categories by their different qualities depending on the level in which they are hot, cold, moist, or dry, as well as the four degrees of their intensity.³⁰⁶ For more about this, see, e.g., Maimonides, *Aphorisms 21*, 68 ff. (p. 123ff.).

11:13 **Seedless raisin:** could refer to *kišmiš*, a variety of seedless raisins (or grapes).³⁰⁷

Sebesten: An unidentified word follows the word ‘sebesten’: جلالا. It could be an adjective to describe premium-quality sebesten, or a corrupt form of another ingredient.

11:14 **Chinese rhubarb:** Chinese rhubarb, *Da huang*, has been used in Chinese medicine for over two thousand years. It was first documented around 200 AD. Through trade it reached the rest of the world, and herbalists in Europe recommended it for gastrointestinal issues, in large doses as a laxative, and small doses for diarrhoea. Thus, it was used both as a laxative and as a diuretic. It was also used to treat liver diseases, kidney stones, and gout. Three varieties of the species, *Rheum officinale*, *Rheum palmatum*, and *Rheum tanguticum*, are still widely cultivated and used as medicinal plants in China. It is a powerful, yet mild laxative that evacuates the intestines and purges the bowels efficiently. As the leaves are poisonous, the roots and the stalks are consumed.³⁰⁸ The rhubarb root,

³⁰³ Galen, *Alim. Fac.*, I, 9, 501 (p. 47).

³⁰⁴ Galen, *Alim. Fac.*, I, 18, 526-527, (p. 58).

³⁰⁵ Lane, p. 747.

³⁰⁶ Temkin, pp. 111-112.

³⁰⁷ Ibn Janāḥ I, 488 (p. 368).

³⁰⁸ Clementi & Misiti, pp. 407-423.

Radix et Rhizoma Rhei, is among the earliest and most recognised Chinese herbal medicines.³⁰⁹

12:3 Phlebotomising the frontal vein Galen: “Similarly when a vein in the forehead is cut, heaviness of the head and pains that have become chronic as a result of plethos are usually relieved”.³¹⁰

12:3 Callous hardenings of the face: النخيلات *al-naḥīlāt*, “callous hardenings on the face”.³¹¹

Polyps: See commentary for §5:11.

12:4 Phlebotomising the cephalic vein and its benefits:

Eyes: Galen: “When the eyes are affected, cutting the vein called the humeral, or the one branching from it at the elbow, quickly brings clear benefit.”³¹² For Galen, the humeral vein is the cephalic vein.³¹³

Throat: Galen: “Parts in the region of the throat and trachea which are much inflamed are greatly benefited at the beginning by venesection at the elbow, but after the beginning by letting blood from the tongue; both the veins in it are cut.”³¹⁴

<the eye combined with pain, throbbing pain and itching>: This part is written in the margin. Where it belongs is not marked in the Ms., but it is likely to be a description of *qurūḥ al-‘ayn al-mutašaqqiqa*.

Wind of pannus: in Arabic *rīḥ al-sabal*.³¹⁵ Lane describes *rīḥ al-sabal* as “a certain disease in the eye [...] resembling a film, as though it were the web of a spider, with red veins [...] or a film of the eye, from the swelling, or inflation, of its external veins upon the surface of the *مُلْتَحِمَة*, which is one of the layers of the eye, [namely, the tunica albuginea, or white of the eye, so called in the present day,] and the appearance of a web, or thing woven, between the two, [i.e. between those veins and the white tunic,] like smoke”.³¹⁶ Ullmann defines *sabal* as Hornhautfell.³¹⁷

Ptilosis: Cf. Maimonides, *Aphorisms* 23: “The eyelids that become thick and hard and whose color turns red and whose hairs fall off is an illness that is called *sulāq*

³⁰⁹ Tang & Eisenbrand, p. 855.

³¹⁰ Galen, *Cur. Rat. Ven. Sect.*, p. 94.

³¹¹ Aphorisms, The Twenty-Third Treatise, 72, p. 55.

³¹² Galen, *Cur. Rat. Ven. Sect.*, p. 90.

³¹³ Galen, *Cur. Rat. Ven. Sect.*, p. 91, footnote 69.

³¹⁴ Galen, *Cur. Rat. Ven. Sect.*, p. 94.

³¹⁵ Hunayn ibn Ishāq, *‘Ashr maqālāt fī al-‘ayn*, pp. 190-191.

³¹⁶ Lane, p. 1302.

³¹⁷ Ullmann, *Medizin*, p. 245.

[ptilosis].³¹⁸ The term features in Galen's *Meth. Med. III* as *ptili*, which, according to Galen, "destroy the eyelashes".³¹⁹

Intitūr: See commentary for §5:6.

Lining of the mouth: Ms. Escorial reads literally 'interior oblong covering', الغشاء المستطيل المستطين *al-ġiṣā' al-mustaṭīl al-mustabṭin*. Possible emendation marks above the word *al-mustaṭīl*.

Fall of the uvula: Cf. Maimonides, *Aphorisms 15*: "The uvula can be affected by the illness of extreme relaxation without an inflammation, in which case we generally cut it off. But when the uvula is affected by this illness, remedies that heat and that cleanse the phlegm are really beneficial for it, because, at that time, the uvula mostly tends to turn white, as if it were lacking blood."³²⁰

12:5 **Pleurisy:** ذات الجنب *dāt al-ġanab*, sometimes only الجنب *al-ġanab*, is pleurisy, "a severe disease, being an inflammatory tumour in the [pleura, or] membrane within the ribs".³²¹

Pleuritis: الشوصة *al-šawsa*. Synonymous to "Barsam - a swelling inside the ribs (shawsa)".³²²

12:6 **Phlebotomising the basilic vein:**

Fleshy-dropsy: The term in Ms. Escorial is *istisqā' lahmī*. *Istisqā'* is one of the Arabic translations of the Greek word for dropsy, ὕδρωψ, that is a general term for oedemas and accumulations of fluids in the belly.³²³

Haemorrhoids: Galen: "If you have recourse to phlebotomy because of suppression of a haemorrhoid, and wish to restrain the bleeding further, you should cut the veins in the arms; but to urge it on, those in the legs."³²⁴

Melancholy: the term for melancholy, in Greek μελαγχολία,³²⁵ signifies "a condition due to an excess amount of black bile".³²⁶ The term features in Ms. Escorial as مالنخوليا *mālinhūniyā*, instead of the more expected مالنخوليا

³¹⁸ Maimonides, *Aphorisms 23*, 71, p. 55.

³¹⁹ Galen, *Meth. Med. III, XIV*, 1017K (LCL 518: 532-533).

³²⁰ Maimonides, *Aphorisms 15*, 27, pp. 61-62.

³²¹ Lane, p. 465.

³²² Kahl 2015, p. 208.

³²³ Ibn Ġanāḥ, I, no. 402, p. 570.

³²⁴ Galen, *Cur. Rat. Ven. Sect.*, pp. 94-95.

³²⁵ Montanari, p. 1300.

³²⁶ Brain, p. 179.

mālinhūliyā, throughout the manuscript. According to Dozy they both are attested forms,³²⁷ and thus, I have not altered the spelling in this edition.

Colic: In the era of al-Rāzī, colic signified abdominal pain arising from intestinal obstruction.³²⁸ According to Ibn Sīnā, it is a disease that causes abnormal retention in the large intestine.³²⁹

Ileus, which means ‘Lord, have mercy’: Ms. Escorial states that ileus (*īlāwus*), in Greek *εἰλεός*, signifies ‘*rabbi arḥim*’, ‘Lord, have mercy’, which corresponds to what he states in *al-Taqsīm wa-l-Tašḡīr*.³³⁰ According to Ibn Sīnā, ileus means *al-musta ‘ād bi-Allāh minhu*.³³¹ According to the editors of Ibn Ḡanāḥ it has been defined as ‘that from which one seeks protection’, by Hippocrates, and as ‘stinking colic’ that causes its sufferer to vomit faeces, by al-Rāzī.³³² Cf. Ibn Ḡanāḥ: “The author of this explanation erroneously assumed that the term is derived from the verb *ἐλεέω* ‘to show mercy’. In fact it originates from another verb, namely *εἰλέω* ‘to shut it’.”³³³ Maimonides, *Aphorisms 23*: “If the small intestines are affected by a hard tumor or by a severe obstruction of feces so that the patient vomits his feces, that illness is called “ileus”, and hardly anyone can be saved from it.”³³⁴ The case features even in Galen, *Nat. Fac.*: “And when the animal becomes sick, this means that the stomach is striving to be evacuated by vomiting. And the expulsive faculty has in it so violent and forcible an element that in cases of ileus [volvulus], when the lower exit is completely closed, vomiting of faeces occurs”.³³⁵ For more on ileus, see, e.g., Buḥtīšū‘ in Kahl, *Rhazes*, p. 191ff., and Maimonides, *Aphorisms 23*, 93, p. 63.

Uterus: See commentary for §5:26.

Gout: Ms. Escorial reads that gout appears especially in the joints of a man في مفاصل الرجل *fī mafāṣil al-raḡul*. Statement supported by al-Rāzī himself in his *Maqālah fī al-naqras* (‘Treatise on Gout’), in which he explains that women do not suffer from gout since their excess blood is discharged during menstruation instead of flowing to the feet, and their disposition is naturally moist and thus, the blood will not turn to the sort that would cause gout.³³⁶ As to phlebotomising for gout, in this treatise al-Rāzī suggests phlebotomising the median cubital vein

³²⁷ Dozy, p. 565.

³²⁸ Al-Rāzī, *Kitāb al-Qawlanġ*, p. 14.

³²⁹ Ibn Sīnā, *Risāla fī l-Qawlanġ*, p. 157.

³³⁰ Ibn Ḡanāḥ I, no. 98, p. 294.

³³¹ Ibn Sīnā, *Risāla fī l-Qawlanġ*, p. 157.

³³² Ibn Ḡanāḥ I, no. 98, p. 295.

³³³ Ibn Ḡanāḥ I, no. 98, p. 295.

³³⁴ Maimonides, *Aphorisms 23*, p. 63.

³³⁵ Galen, *Nat. Fac.*, III. XIII, 193 (LCL 71: 299).

³³⁶ Rhazes, *Naqras*, p. 20.

“provided it is wide and thin-walled; otherwise, blood may be let through the basilic vein.”³³⁷

Varicose veins: Ms. Escorial offers the word حمالين *ḥamālīn*, ‘carriers’ or ‘porters’. It is also possible that the word pregnant, حامل *ḥāmīl*, is intended.

Elephantiasis: It is worth discussing the terms ‘leprosy’ and ‘elephantiasis’. Ullmann defines the term الجذام *al-ḡudām* as both leprosy and elephantiasis,³³⁸ yet Ms. Escorial also includes a term that more specifically refers to elephantiasis, namely داء الفيل *dā’ al-fīl*, i.e., ‘elephant illness’. According to Johnston (2006) the term ‘elephantiasis’ in the Antiquities was not used in the modern sense, but possibly for leprosy,³³⁹ and presents the term ‘alphos’ a “dull-white leprosy, esp. on the face”³⁴⁰ that does not correspond to leprosy as today, but as a skin disease causing the loss of pigmentation.³⁴¹ Since the Arabic term *ḡudām* for ‘leprosy’ features in the manuscript in the context of illnesses that occur in the head, it is likely that it refers to the aforementioned condition. Galen mentions ‘lepra’, i.e., “leprosy which makes the skin scaly [...] a skin disease characterized by eruptions and loss of skin pigmentation.”³⁴² As to ‘elephantiasis’, Ms. Escorial specifies that it is an illness that causes the skin pigmentation to change and the lower body parts to become enormous, which could suggest the more modern idea of the illness today known by this name. Galen: “When I speak of opposites to those things mentioned, I refer to the liver being adapted to the generation of such a superfluity, a diet consisting of those foods which by nature generate blood that is thick and muddy, and a spleen that is weaker in nature and more unable to draw all that is generated to itself. In such a body, the blood becomes turbid and thickened in the veins. But sometimes the veins themselves are provided with a separative capacity for getting rid of what is abnormal, just as all other parts are, and pour this humor out through hemorrhoids. Often it rushes down to dilated (varicose) veins and is sometimes thrust toward the skin as a whole. This is the genesis of the affection people call *elephas/elephantiasis*.”³⁴³ In *Meth. Med. G*, Galen recommends purging the melancholic humour and phlebotomy for treating elephantiasis,³⁴⁴ and Iṣlimūn says: “Useful against elephantiasis is to bleed the

³³⁷ Rhazes, *Naqras*, p. 35.

³³⁸ Ullmann, *Islamic Medicine*, p. 88.

³³⁹ Johnston 2006, p. 54.

³⁴⁰ Johnston 2006, p. 50.

³⁴¹ Johnston 2006, pp. 50-51.

³⁴² Johnston 2006, p. 56.

³⁴³ Galen, *Meth. Med. G*, Book II, 140K (LCL 523: 550-551).

³⁴⁴ Galen, *Meth. Med. G*, 12 (LCL 523: 335).

(small) saphenous vein in both shanks, and to keep shaking off (matter) by (using) that which purges the black bile.”³⁴⁵

12:7 Galen phlebotomised in putrid fever...: In *Meth. Med. III*, Galen talks about “evacuating the abundance”³⁴⁶ in order to cure the fever and stop the putrefaction. He also says: “It is best, then, as I said, to open a vein, not only in the continuous fevers but also in all the other fevers due to putrefaction of humors, at least whenever the factors of age and capacity do not prevent this.”³⁴⁷

Bad smell of urine: Hippocrates: “If the urine contain blood, pus and scales, and its odour be strong, it means ulceration of the bladder.”³⁴⁸ See also commentary for §3:3.

Small particles in the urine: Ms. Escorial reads something that looks like بسوره which could be بثوره ‘its pustules, pustules in it’, yet the word نثرة *natra*, ‘tiny particle’ is more likely to be meant. Perhaps the used term covered this usage.

Lassitude: Ms. Escorial offers an uncertain reading of فسورة, in this case understood as فتور *futūr*, lassitude: “In patients suffering from lassitude, says Galen, there is not much good blood, but an abundance of crude or uncocted humours; if peripheral blood is taken away by venesection, it will only be replaced by worse blood spreading outwards from the first veins to take its place.”³⁴⁹

12:9 Phlebotomising the popliteal fossa and the saphenous vein: Galen: “You should always evacuate women who suffer from suppression of the menses from the legs, either by opening a vein or by scarifying.”³⁵⁰

13:2 & 13:3 Galen’s preparation: This prescription and the instructions of its usage correspond to Galen in *Meth. Med. II*. Coming to ‘after three days’, what is stated in Ms. Escorial is possibly corrupt. Galen: “the best of all the medications I know, and the one which is safer to use for hemorrhages from the meninges, is the one I shall speak of. Mix one part of frankincense with half a part of aloes, and then, when it comes to the time for use, mix in the white of an egg to such a degree that the whole has a honeylike consistency. Next, let this be taken up by the softest hairs of a hare, and then let it be applied in abundance to the vessel and to the whole wound. Bind externally with a linen cloth in an underbandage, making the first four or five turns on the hemorrhaging vein itself, and from that point, distribute it to the root of the vessel in those parts where it is possible to distribute

³⁴⁵ Kahl, *Rhazes*, p. 169.

³⁴⁶ Galen, *Meth. Med. III, XI*, chapter 10 (LCL 518).

³⁴⁷ Galen, *Meth. Med. III, XI*, chapter 15, 785K (LCL 518).

³⁴⁸ Hippocrates, *Aphorisms IV, LXXXI* (LCL 150: 156-157).

³⁴⁹ Brain, p. 123.

³⁵⁰ Galen, *Cur. Rat. Ven. Sect.*, p. 83.

to the root, which is almost all parts except for the meninges. Then, when you release it on the third day, if the medication is still adhering safely to the wound, apply another encircling bandage, moistening the tampon from the hairs, as you bound it initially. If the first tampon should fall off spontaneously, gently compress the root of the vessel with your finger until there is no further flow, then remove your finger carefully and apply another tampon.”³⁵¹ Maimonides offers a plausible explanation of what most probably is meant in his passage, cf.

Maimonides, *Rules*: “If you want to stop a hemorrhage, you should first of all put a medicine on it that stops the bleeding; then apply a bandage and observe: if it still bleeds a little bit, you should not untie the bandage; but if it bleeds a lot, you should untie the first bandage and repeat this procedure after you let the patient rest for a little while. You should leave on the bandage until the third day, then untie it gently, and if you find the medicine [still] adhering to the wound, you should add [some more medicine] to it and put a [new] bandage on it. And if you find that [the wound] has healed, you should remove it [the bandage] gently and do the same thing again.”³⁵²

More aloe for the bodies that are dominated by dryness: Galen in *Meth. Med. II*: “Obviously, we must apply aloes more to hard bodies”.³⁵³

Processed cotton: Ms. Escorial reads قطن لين مدبر, understood as processed cotton.

What most probably is meant is what Galen above has stated, i.e., a linen cloth in an underbandage.

13:4 **And if he develops fever:** This can be understood in two ways: either as ‘if he [i.e., the patient] develops a fever’, alternatively as ‘if it [i.e., the phlebotomised site] becomes warm. The first reading is deemed more plausible, suggested in Ms. Parma: “גתחדשה בו קדחת או שנפחד מזה יזה עליו פעם אחר פעם עם מי ורודים ולא יתיר”.

13:5 **Burned chalcitis:** According to Galen, chalcitis is a very strong medication to cicatrise wounds.³⁵⁴ For more on the topic of healing wounds, see Galen, *Meth. Med. III* and *IV*.

Its prescription: In al-Rāzī’s work on alchemy, *Kitāb al-Asrār*, the prescription is as follows: “You take vitriol, purify it, add the liquid of a distilled egg yolk in the amount of a quarter of the vitriol and let it solidify.”³⁵⁵

³⁵¹ Galen, *Meth. Med. II*, V, 320K-321K (LCL: 517: 22-25).

³⁵² Maimonides, *Rules*, 75, p. 28.

³⁵³ Galen, *Meth. Med. II*, V, 322K (LCL 517: 26-27).

³⁵⁴ Galen, *Meth. Med. I*, III (LCL 516: 304-305).

³⁵⁵ Al-Rāzī, *Asrār*, p. 108.

The three vitriols: In Ms. Escorial al-Rāzī states that there are three vitriols. In his book on alchemy, al-Rāzī lists five vitriols: black, white, yellow, red, and green vitriol.³⁵⁶ For producing vitriols artificially, see al-Rāzī, *Asrār*, pp. 107-108.

13:8 Roman earth: Another name for terra sigillata.³⁵⁷ According to Riddle, the terms earth, soil, or dirt, refer to “a variety of minerals, some of which have medicinal use.”³⁵⁸ Dioscorides: “All earth that falls (within ye compass) of medicinal use hath a supreme faculty of cooling & stopping the pores, but it differs in kind: on being good for other things with some preparations.”³⁵⁹

Red and white sandalwood: The term صندلین *ṣandalayn* can be understood as a designation for the two common types of sandalwood, i.e., red sandalwood and white sandalwood, as they often are mentioned side by side.³⁶⁰

14:2 The lateral parts of the neck: Fonahn defines the term الأخدعان *al-aḥḍa‘ān* as ‘the lateral parts of the neck’.³⁶¹ Lane describes them as “Each of the two branches of the occipital artery which are distributed upon the occiput” and “one pair of veins, called the أخدعان, in the cupping-place of the neck”, “or in the place [of the application] of the two cupping-instruments; being a branch from the وريد [or carotid artery]”, “the أخدعان are two concealed veins in the place of the cupping of the neck”, “some say that they are the ودجان”.³⁶²

14:3 Cupping takes the blood from small veins: Cf. Quṣṭā ibn Lūqā, *Numbness*: “by cupping, the blood is extracted from narrow, invisible passages.”³⁶³

14:5 It relieves the head: possibly what is meant is that cupping relieves the pain in the head and the other mentioned parts. Galen: “use a cupping glass affixed to the occiput to drive [the blood] back.”³⁶⁴

14:9 Cupping the legs to urge on the menses: Galen: “You know that I have the same opinion concerning women whose menstrual purgation has been suppressed. Evacuation should not be deferred in these patients either; it is not essential, however, to open a vein, for in fact scarifications of the ankles are sufficient to eliminate the excess, since they possess some other power to urge on the menstrual

³⁵⁶ Al-Rāzī, *Asrār*, p. 102.

³⁵⁷ Kās, *Mineralien II*, pp. 845-847.

³⁵⁸ Riddle, *Dio. Pharm. Med.*, p. 162.

³⁵⁹ Dioscorides, *GHD*, Book V, no. 151, p. 397.

³⁶⁰ Schmucker, *Firdaus*, no. 461.

³⁶¹ Fonahn, p. 6.

³⁶² Lane, p. 710.

³⁶³ Quṣṭā ibn Lūqā, *Numbness*, p. 59.

³⁶⁴ Galen, *Meth. Med. II*, V, 332K (LCL 517: 40-41).

changes, just as venesections at the ankles and hams do. You should always evacuate women who suffer from suppression of the menses from the legs, either by opening a vein or by scarifying.”³⁶⁵ In *Meth. Med. II, XIII*, Galen writes: “And if we wish to set in motion the menstrual flow, we place the cupping glass on the pubes and the inguinal glands.”³⁶⁶

Good, white complexion: Ms. Escorial reads: “whoever is of the women, the appearance of her face is beautiful, and her colour is white”. Qusṭā ibn Lūqā also refers to women in the same words: “who was of women, her colour white”.³⁶⁷ This, according to Galen, is because “Those of them who are of fairer complexion collect thinner blood, and hence derive the greatest benefit from scarification at the ankles. But treat those who are darker by phlebotomy, since they accumulate thicker and more melancholic blood, particularly if they appear to have large veins; these are found in the more slender and darker women, while smallness of the veins is characteristic of those who are plump and fair, and in these it is better to scarify the ankles than to cut a vein. And indeed these women have small veins in their legs, so that the right amount does not escape even if they are well phlebotomised.”³⁶⁸

14:10 **Gradually:** Understood as increasing the strength of the suction gradually. It is the vacuum caused by the heat that causes the cup to adhere, and this could be controlled by the degree of heating the cup.³⁶⁹

14:15 **These cupping glasses may be made of copper or silver:** I am using the generic term ‘cupping glass’ in my translation despite the fact that Ms. Escorial says they are made of copper or silver. The term ‘cupping glass’ features widely in several other translations of Ancient Greek medical texts. An alternative translation could be ‘cupping vessel’, mainly made of copper alloy, but silver, glass, and clay were used as well.³⁷⁰ For more on cupping glasses – or vessels – see Bliquez, *The Tools of Asclepius*, p. 56ff.

14:16 **When they are fastened on the head, or below the false ribs, or the flanks after phlebotomy, they end epistaxis:** Galen: “On the same basis too, very large cupping glasses, when applied to the hypochondrium, stop hemorrhages from the nose. However, when [blood] flows from the right nostril, it is necessary to place [the cupping glass] over the liver, while when it flows from the left nostril, it is necessary to place it over the spleen, and when it flows from both nostrils, over both viscera.”³⁷¹ Qusṭā ibn Lūqā confirms that cupping the false ribs

³⁶⁵ Galen, *Cur. Rat. Ven. Sect.*, p. 83.

³⁶⁶ Galen, *Meth. Med. III, XIII*, 971K (LCL 518: 396-397).

³⁶⁷ Qusṭā ibn Lūqā, *Faṣḍ*, p. 339.

³⁶⁸ Galen, *Cur. Rat. Ven. Sect.*, pp. 83-84.

³⁶⁹ Bliquez, p. 59.

³⁷⁰ Bliquez, p. 57.

³⁷¹ Galen, *Meth. Med. II, V*, 316K (LCL 517: 16-17).

is beneficial for ending epistaxis, adding that it should be conducted on the same side as the bleeding nostril.³⁷²

14:17 **If they are fastened on the breasts:** Hippocrates: “To restrain menstruation in women, apply a very large cupping instrument to the breast.”³⁷³

14:20 †.....†: The text is corrupt beginning from the words والحمد لله رب, which are still possible to be identified somewhat clearly. Being aware of the context, the continuation most probably contains at least والحمد لله رب العالمين, of which fragments can be observed, but the last line of the text is completely corrupt. See commentary for § 0:1. Ms. Parma finishes with the abbreviation תושלבע תושלבע; “Finished and Complete, Praise be to God, Creator of the Universe”.

³⁷² Qustā ibn Lūqā, *Faṣd*, p. 342.

³⁷³ Hippocrates, *Epidemics II*, 16 (LCL 477: 80-81).

Indices

Index of materia medica

Including foodstuffs and compound drugs. Arranged in Latin alphabetical order according to the transliterated Arabic form. The vowels here are not the only possible, as there are sometimes several variant readings. The references are given in an abbreviated form. See the *key to index of materia medica* for English-Arabic.

ās آس myrtle: Cf. Ibn Ğanāḥ II, no. 520 (p. 695): the common name for *Myrtus communis* L. (Myrtaceae).

afāwīḥ أفأويه aromatic substances: Cf. Schmucker, *Firdaus*, no. 53 (p. 78):

“perfume or odoriferous substance or a thing, or substance, with which a perfume, or odoriferous substance, is compounded or prepared”; spices, fragrant flowers. All kinds of aromatic additions to drugs, food, incense and the like. Ibn Māsawayh (p. 6) divides simple aromatic substances into two categories: *al-uṣūl*, the five principal aromatic substances, that include musk, ambergris, aloeswood, camphor, and saffron, and *al-afāwīḥ*, 24 other aromatic substances, that include nard, cloves, sandalwood, nutmeg and mace, rose, Indian plum, cinnamon, agarwood seed, black cardamom, cubeb, cardamom, Sichuan pepper, flemingia, costus, unguis odoratus, bunk, mastic, styrax, ladanum, and kamala, while the remaining are difficult to verify, yet are given in Arabic and French: *zarnab* (l’if commun), *ḥabb al-mīsam* (le ben oléifère), *maḥlab* (le mahaleb). Cf. Ibn Ğanāḥ I, No. 143: Ibn Māsawayh (p. 21) describes *ḥabb al-mīsam* by saying it is similar to *ḥabba ḥaḍrā*, i.e., terebinth.

‘adas عدس lentils: Cf. DTr II, no. 91 (pp. 255-256): *Lens culinaris* Medik.

Considered difficult to digest if consumed continuously, causing several issues. Cf. Galen, *Alim. Fac.*, I:18, p. 58: “Their juice, as stated previously, is the reverse of astringent. This is why if, after boiling them in water, one were to drink it seasoned with salt or fish sauce, and oil as well, the draught is aperient. But on boiling it twice, as described, the soup prepared from these lentils has the opposite property to the juice – drying up gastric fluxes and increasing the tone in the

oesophagus, intestines and the stomach as a whole. This is why it is an appropriate food for those with gastric or dysenteric complaints.”

‘**adasiyya** عدسية ‘adasiyya: Cf. Nasrallah, p. 293: A lentil dish with several varieties.

aqāqiyā أقاقيا acacia gum: Cf. Ibn Ğanāḥ I, no. 51 (pp. 256-257): acacia gum, also Senegal gum, clearly distinguished from gum Arabic by the Arabs. Acacia gum comes from the acacia tree (*Acacia nilotica* (L.) Delile, Leguminosae), in Greek ἀκακία, denoting both the tree and the gum, in Arabic *aqāqiyā*, which is used only for the gum.

‘**aqīd al-‘inab** عقيد العنب grape jelly: Cf. Ibn Ğanāḥ II, no. 566 (p. 737): grape jelly, the inspissated must of grapes.

‘**asal** عسل honey: Cf. DTr II, no. 64 (p. 238): Mel commune, honey, praised as a medicine since the Ancient times and used in electuaries, syrups, herbal and sour honeys, ointments, suppositories and enemas.

banafsağ بنفسج violet: Cf. DTr IV, no. 110 (pp. 623-624): *Viola odorata* L., the leaves, flowers, seeds and roots of which were used as emetics and laxatives.

bāqilā باقلاء fava beans: Cf. Nasrallah, p. 796: *bāqilā*, a term for fava beans used in Iraq. Cf. DTr II, no. 89 (p. 253): *al-bāqillā*, bean. *Vicia faba* L. and Bastarde, Leguminosae. Cf. Ibn Ğanāḥ I, no. 184 (p. 373): *Bāqillā* (باقلى), common name for the broad bean.

baqla ḥamqā بقلة حمقاء purslane: Cf. Ibn Ğanāḥ II, no. 751 (pp. 892-893): common purslane, *Portulaca oleracea* L., Portulacaceae.

barbārīs بربريس barberry, berberis: Cf. DTr I, no. 62 (pp. 145-146): *barbārīs* usually refers to *Berberis vulgaris* L., barberry. Dioscurides did not describe the barberry, which was unknown to the Greeks, but a rose plant, which most authors consider *Crataegus oxyacantha* L., hawthorn. The confusion may have arisen from the Arabs who understood barberry and hawthorn to be the same plant.

bayād al-bayḍ بياض البيض egg white: in Ms. Escorial used in dressings to treat wounds.

al-bayḍ al-nīmbarišt البيض النيمبرشت soft-cooked eggs: Cf. Nasrallah, p. 830: The Arabic term for soft-cooked eggs is *al-bayḍ al-nīmbarišt*. Cf. Ibn Ğanāḥ II,

no. 626 (p. 783): *nāmbirišt*, Persian for half boiled, poached egg, as in Ḥunayn's translation of Galen's *Simple Drugs*.

biṭṭīḥ بطيخ melon: Cf. DTr II, no. 118 (p. 283): *Cucumis melo* L. et. al.

Cucurbitaceae; *Citrullus vulgaris*. Cf. Ibn Ḡanāḥ I, no. 122 (p. 319): "*Biṭṭīḥ Sha'mī wa-Filasīnī* (Syrian and Palestinian melon). According to al-Isrā'īlī this is the watermelon (*dullā'*), which is the Sindhian (*Sindī*) variety." Commentary: "*Dullā'* and *biṭṭīḥ* are names of the common melon, *Cucumis melo* L., and of the watermelon, *Citrullus lanatus* (Thunb.) Matsum. & Nakai (synonym of *Citrullus lanatus* var. *lanatus* and *Vitrullus vulgaris* Schrad.; Cucurbitaceae)." Thus, *biṭṭīḥ* seems to be the term for watermelon.

bizr, pl. *buzūr* بزور . بزج Seed; spices: Cf. Ibn Ḡanāḥ I, no. 145 (p. 338): *Bizr* or *bazr*, seed; oil made of seeds. Cf. Dozy, p. 81: In plural it can also mean spices.

dam al-aḥawayn دم الأخوين dragon's blood: Cf. Ibn Ḡanāḥ I, no. 72 (p. 275): "the resin of *Dracaena cinnabari* Balf.f. (Asparagaceae), a tree found on the island of Socotra in the Arabian Sea."

dārfulful دارफल long pepper: Cf. DTr III, no. 134 (p. 498): *Piper longum* L., Piperaceae. Cf. Dioscorides, *GHD*, Book II, no. 189 (p. 199): "All pepper in generall hath a warming, ureticall, concocting, attracting, dissolving power, & of cleansing away those things which darken the Pupillae."

dārṣīnī دارصيني cinnamon: Cf. Ibn Ḡanāḥ I, no. 239 (p. 431): "*Dārṣīnī*, derived from the Persian *dār chīnī* ('Chinese wood'), is the common Arabic name of cinnamon (*Cinnamomum verum* J.Presl; Lauraceae [...])."

dawā' دواء drug, remedy: Cf. Fellmann, *Qalānisī*, no. 3. 12. (p. 183): A generic term for drugs, designating both simple and compound drugs.

dawā' mushil دواء مسهل purgative drug: Cf. *Qalānisī*, no. 3. 64. (p. 250): laxative, purgative drug, either for oral or rectal use. *Mushil* designates all drugs that have a purgative effect in the sense of humoral pathology: treating diseases equals balancing out the imbalance in body fluids which was seen as the cause of diseases. The term mostly applies to purgative drugs, but also expectorant and sweat-inducing agents come under this term.

duhn دهن oil: Cf. *Qalānisī*, no. 3. 13. (p. 183): pure oil, or medicinal oil.

dullā' دلاع common melon: Ibn Ḡanāḥ I, no. 122 (p. 319): "*Dullā'* and *biṭṭīḥ* are names of the common melon, *Cucumis melo* L., and of the watermelon, *Citrullus*

lanatus (Thunb.) Matsum. & Nakai (synonym of *Citrullis lanatus* var. *lanatus* and *Vitrullus vulgaris* Schrad.; Cucurbitaceae).” See also *biṭṭīḥ* above.

ḡāliyya الغالية *al-ḡāliyya*: Cf. *Qalānisī*, no. 3. 22. (p. 196): A perfume blend that comes in various types, the basic components of which are musk and ambergris that are mixed with ben oil. Various other fragrances may be added.

ḡullāb جلاب *julep*, rose water syrup: Cf. Fellmann, *Qalānisī*, no. 3. 27. (p. 201): A syrup made of rose water, sugar, and perhaps other ingredients. It is used both as a cooling drink and as a purgative. For a simple *julep* one takes two parts of sugar mixed with six parts of rose water, boils it until half of it remains and removes the foam. Powdered saffron is added, and the drink may be dissolved with ice.

ḥall خل *vinegar*: Cf. *Qalānisī*, no. 3. 33. (pp. 210-211): Vinegar itself was regarded as a medicine, as it was thought to have a cooling effect. Vinegar also serves as a solubiliser. Cf. *Qalānisī*, no. 3. 84. (pp. 267-268): Alkaloids can be extracted from the drugs better with vinegar than with water, because they form a soluble compound with it. Thus, vinegar extracts are usually stronger than decoctions made with water. Although this chemical process naturally was unknown, the increased effect was most evidently noticed.

ḥalīlaḡ هليلج *myrobalan*: Cf. Ibn Ḡulḡul, *Dio.*, no. 1 (p. 27): the fruit of *Terminalia chebula* tree. Cf. Ibn Ḡanāḥ II, no. 1028 (p. 1141): three kinds of myrobalan: *ḥalīlaḡ*, chebulic myrobalan; *balīlaḡ*, myrobalan; and *amlaḡ*, emblic myrobalan.

ḥalwā حلواء *confection*: Cf. Lane, p. 634: sweetmeat; could also mean sweet fruit, or more specifically, *maḡī*, a confection prepared of dates kneaded with milk.

ḥass خس *lettuce*: Either *ḥass barrī* (DTr IV, no. 18, p. 530) or *ḥass bustānī*, *Lactuca sativa* L. (DTr II, no. 119, p. 284).

ḥawlān خولان *buckthorn*: Cf. Ibn Ḡanāḥ I, no. 345 (p. 524): *kuḥl Ḥawlān*, i.e., ‘collyrium of the Ḥawlān’, synonymous to *ḥuḍaḍ*, which is the Arabic equivalent of varieties of buckthorn, e.g., Mediterranean buckthorn (*Rhamnus lycioides* L.; Rhamnaceae), and rock buckthorn (*Rhamnus saxatilis* Jacq.).

ḥindibā هندباء *endive*: Cf. Ibn Ḡanāḥ I, no. 275 (pp. 460-461): endive, *Cichorium endivia* L. There are two types of *ḥindibā*, *al-sarīs*, from the Greek σέρις, that grows in gardens, and another that grows in the wild that comes in two varieties. Like the Greek term σέρις, the Arabic *ḥindibā* can also mean chicory (*Cichorium intybus* L.; Compositae). Cf. DTr II, no. 114 (p. 280): *ḥindibā*, endive, that is *al-*

sarīs, from the Greek σέρις. There are three varieties of *al-sarīs*: two wild, and one tame. The species are *Cichorium intybus* L., and *Cichorium endivia* L., endive, Compositae, and *Lactuca serriola*, of which endive is probably the latter.

ḥiṣrim حصرم verjuice: Cf. Schmucker, *Firdaus*, no. 245 (p. 167): juice of unripe grapes. Cf. Liddell/Scott, p. 1229a: “An acidic juice obtained by pressing unripe grapes, or a juice of other unripe fruits”. Lane (p. 584) mentions that crude and sour grapes (ḥiṣrim), when rubbed on the body in the bath, either bruised or pulverised, strengthens and cools the body.

ḥiṣrimiyya حصرمية ḥiṣrimiyya: Cf. Nasrallah, p. 607: a stew that is soured with the juice of unripe grapes.

ḥiyār خيار cucumber: Cf. Ibn Ḡanāḥ I, no. 190 (p. 377): Common name for cucumber (*Cucumis sativus* L., Cucurbitaceae).

ḥiyāršanbar خيارشنبر cassia fistula: Cf. Ibn Ḡanāḥ II, no. 875 (p. 1010): “The loanword *khiyārshanbar* refers to purging cassia, also known as ‘Indian laburnum’, ‘golden rain’, or ‘golden shower tree’ (*Cassia fistula* L., Leguminosae). The Arabic term is derived from the Persian form *khiyār-čanbar* composed of *khiyār* (‘cucumber’) and *čanbar* (‘circle, collar, necklace’).”

lubb ḥiyāršanbar لب خيارشنبر pulp of cassia fistula: Cf. Ibn Ḡulḡul, *Dio.*, no. 4 (p. 29): The black, slightly laxative pulp contained in the fruit of cassia fistula.

ḥubbayzā خبيزي mallow: Cf. DTr II, no. 101 (p. 266): *al-ḥubbāzā*, mallow, *Malva silvestris* L.; the leaves and flowers have been prescribed since the ancient times because their mucilage serves as an astringent, expectorant and soothing agent in cough medicines and gargles. The leaves are eaten as a vegetable.

ḥuqna, ḥuqan حقنة ج. حقن enema: Cf. Fellmann, *Qalānisī*, no. 3. 32. (p. 209): Enemas are water and the like boiled with drugs and oil, thereafter poured into the rectum. The composition of laxative enemas is similar to the composition of laxative decoctions, since they are both composed of laxative and diluting drugs.

ihlīlağ إهليلج myrobalan: see *halīlağ* above.

ihlīlağ aṣfar إهليلج أصفر yellow myrobalan: Cf. Ibn Ḡulḡul, *Dio.* no. 1 (p. 28): *Terminalia citrina*, Combretaceae.

iğğāṣ إجاص plum: Cf. DTr I, no. 97. (p. 184): *Prunus domestica* and its varieties in the Rosaceae family. Cf. Galen, *Alim. Fac.*, II:31 (p. 94): According to Galen,

plums are laxative due to their moisture and viscosity, and beneficial for moistening and cooling the stomach.

‘**inab** عنب grape (Schmucker, *Firdaus*, no. 500). Cf. Ibn Ğanāḥ I, no. 65 (pp. 267-268): grapevine, *Vitis vinifera* L., Vitaceae. Galen regards grapes as more nutritious than other seasonal fruits (Galen, *Alim. Fac.*, II:9, pp. 77-78).

‘**inab al-ṭaḷab** عنب الثعلب nightshade: Cf. DTr IV, no. 63 (p. 573 f.): Several species of nightshade plants from the Solanaceae family, including e.g., *Solanum nigrum* L., *Solanum villosum* L., *Solanum dulcamara* L., *Solanum alkekengi* L., *Atropa belladonna* L. They have a soporific effect that can lead to death.

isfānāḥ إسفناخ spinach: Cf. Schmucker, *Firdaus*, no. 30 (p. 67): *Spinacia oleracea* L., spinach.

isfīdāğ إسفيداج ceruse: Cf. Ibn Ğanāḥ I, no. 76 (p. 278): ceruse, white lead.

isfīdbāğ إسفيدباج isfīdbāğ: Cf. Nasrallah, p. 608: A white dish, notorious for being a balanced dish fit for all. Cf. Fellmann, *Qalānisī*, no. 3. 67. (p. 252): *isfīdbāğ*a, a dish, perhaps a soup, made of meat, onions, oil and cottage cheese.

iyārağ al-fīqrā ايارج الفيقرا hiera picra, bitter hiera: Cf. Fellmann, *Qalānisī*, no. 3. 38. (p. 216): *iyārağ fīqrā*, from the Greek ἱερά πικρά = bitteres Heiligmittel, i.e., ‘divine bitter’; Cf. Kahl *Sābūr*, p. 72; ἱερά, a name for several medicines in the Greek pharmacological tradition.

kāfūr كافور camphor: Cf. DTr III, no. 24 (p. 370): The white, translucent mass obtained from *Cinnamomum camphora* [L.], or *Drybalanops aromatica*, Dipterocarpaceae. Cf. Ibn Ğanāḥ I, no. 211 (p. 398): “the bract (*qishr*) of the inflorescence of the date palm”.

kaṭīrā كثيراء tragacanth: Cf. DTr III, no. 21 (p. 366): the gum resin that forms in the root and stem of several species of *Astragalus gummifer* Labill et. al.

kummaṭrā كمثرى pear: Cf. DTr I, no. 91 (p. 179): *Pyrus communis* L., Rosaceae. The word comes originally from Akkadian. Cf. Dioscorides, *GHD* Book I, 167 (p. 85): “There are many kinds of Peares but they all binde, & therefore they are fitt to be put into repellentia Cataplasmata. The decoction of the dryed ones, or if they be taken raw, stop ye belly, but being eaten they hurt such as eate them fasting.”

kundur كندر frankincense: Cf. DTr I, no. 30 (p. 113): *al-kundur*, synonymous with *al-lubān* or *al-lūbān*, is frankincense, the dried gum resin of *Boswellia*

species, particularly *Boswellia Carteri* Birdw., Burseraceae. It originates from Southern Arabia and Somalia, especially Šiḥr in Oman, as mentioned by Dioscorides.

kuzbura كزبرة coriander: DTr III, no. 60 (p. 411): *Coriandrum sativum* L., used both medically and as a spice. The name originates from Akkadian.

laqāniq لقانق laqāniq: Cf. Nasrallah, p. 610: Small, spicy sausages.

liḥyat al-tays لحية التيس goatsbeard: Cf. DTr II, no. 126 (p. 292): *liḥyat al-tays*, lit. goatsbeard, from the Greek *τραγοπόγων*, which is either *Tragopogon pratensis* L. or *Tragopogon porrifolius* L. The fresh plant provides good fodder and vegetables. In medicine especially its milky juice, *‘uṣāra*, is used.

lubāb al-ḥubz لباب الخبز bread pith (Nasrallah, p. 570).

mā’ ماء water: Cf. Fellmann, *Qalānisī*, no. 3. 53. (p. 239): Water, *mā’*, usually refers to a drug extract that is made with water.

mā’ al-ša’īr ماء الشعير barley broth: Cf. Nasrallah, p. 448: A decoction of barley with water. Literally barley water, also known as barley broth, barley gruel, or ptisane.

maḥmūda محمودة scammony: Cf. DTr IV, no. 160 (p. 674): المحمودة, *al-maḥmūda*, is a synonym for السقمونيا, *al-saqmūniyyā*, *convolvulus scammonia*. The resin of the dried, milky sap extracted from its living roots has a strong laxative effect.

māmīṭā ماميتا glaucium: Cf. DTr III, no. 81 (p. 437): Glaucium, Arabicised as *ḡalawqiyūn* from the Greek *γλαύκτιον*, *ṣiyāf māmīṭā*, or simply *māmīṭā*. The drug is the juice of *Glaucium corniculatum* L. a variety of red-horned poppy, and *Glaucium flavum*, yellow-horned poppy, Papaveraceae. The root of the red-horned poppy is said to have a smell similar to opium, and the crushed seeds were used as an eye remedy.

martak مرتك litharge: Cf. Ibn Ḡanāḥ II, no. 543 (p. 716): synonymous with *murdāsanḡ*, both denoting litharge, lead oxide. Both terms appear in Ms. Escorial.

maṣṭakā مصطكى mastic: Cf. Ibn Ḡanāḥ II, no. 562 (p. 733): mastic, resin of *Pistacia lentiscus* L. (Anacardiaceae).

mayba ميبة mayba: Cf. Fellmann, *Qalānisī*, no. 3. 53 (p. 238): Mayba is a composite drink made from quince juice and wine. Quince juice is boiled with honey until the mixture defoams and thickens, and sugar and various spices are added.

milḥ ملح salt: Cf. Schmucker, *Firdaus*, no. 737: salt.

misk مسك musk: Cf. Ibn Ḡulḡul, *Dio.*, no. 33 (p. 51): Musk, the glandular secretion of the male musk deer (*Moschus moschiferus* L., Cervidae), obtained from the preputial sac near the navel of the animal.

mudaqqaqāt مدققات mudaqqaqāt: Cf. Nasrallah, p. 611: Spicy, ground meat cooked into casserole-like dishes.

murr مر myrrh: Cf. DTr I, no. 27 (p. 110): The gum resin obtained from the bark of several species of *Commiphora abyssinica* Burseraceae. Cf. Lane, p. 2701: Myrrh, a certain medicine, used orally for cough and intestinal worms, and on a plaster for scorpion stings.

murdāsanḡ مرداسنج litharge: see *martak* above.

muṭaḡḡanāt مطجنات muṭaḡḡanāt: Cf. Nasrallah, p. 612: A dish made of poultry, seasoned with spices and herbs.

muzawwarāt مزورات muzawwarāt: Cf. Nasrallah, p. 433: Vegetarian dishes, lighter than meat dishes and easier to digest.

nabīd نبيذ wine: Cf. Nasrallah, pp. 468-470: wine made by using either dates, *dādī* (stong date wine), or grapes, or a combination of these. Cf. Galen, *Alim. Fac.* III:39 (pp. 149-150): “The thick, red ones are the most useful of all wines for the production of blood, since they require the least change into it”.

nasḡ al-‘ankabūt نسج العنكبوت cobweb (Dozy, p. 666). Cf. Riddle, *Dio. Pharm. Med.* (Book II, 68, p. 107): According to Dioscorides, when cobweb is applied, it stops bleeding and prevents the occurrences of ulcers that emerge on the surface of the skin due to inflammation.

našā’ نشاء starch: Cf. Schmucker, *Firdaus*, no. 769 (p. 509): starch, starch paste, amyllum. The best kind is made from good wheat.

qāqulla قاقلة black cardamom: Cf. Ibn Ḡanāḥ I, no. 280 (pp. 467-468): *qāqulla*, *hāl* and *hīl* all denote cardamom. Whereas *hāl*, *hīl* and *hīl bū* stand for the smaller variety, *qāqulla* is the larger variety, i.e., black cardamom. Cf. Ibn Ḡulḡul, *Dio.*, no. 9 (p. 33): *qāqulla* is *Elettaria cardamum maior*, Zingiberaceae.

qar قرقع gourd, pumpkin: Cf. DTr II, no. 116 (p. 282): Three different plants from the cucurbitaceae family: *Cucurbita maxima*, *Cucurbita pepo*, *Lagenaria vulgaris*.

qarāsiyā قراسيا cherry: Cf. DTr I, no. 84 (p. 174): *Prunus avium* L. et. al., Rosaceae, and *Prunus mahaleb* L., et. al. Cf. Ibn Ḡanāḥ II, no. 869 (p. 1004): *al-qarāsiyā*, from the Greek κερύσσια, cherry.

qaranful قرنفل cloves: Cf. Ibn Ḡulḡul, *Dio.*, no. 19 (p. 34): cloves, “*Syzygium aromaticum* [L.] Merr. et L. M. Perry, Myrtaceae (*Caryophyllus aromaticus* L.).”

qaṭaf قطف orach: Cf. Ibn Ḡanāḥ I, no. 124 (p. 322): *Qaṭaf*, the Arabic name for garden orach (*Atriplex hortensis* L., Amaranthaceae). Other names for it are *al-baqḷa al-dahabiyya*, ‘the golden vegetable’, and *baql al-Rūm*, ‘vegetable of the Romans’.

qittā قثناء cucumber: Cf. Ibn Ḡulḡul, *Dio.*, no. 43 (p. 57): often treated as synonymous to *ḥiyār*, *Cucumis sativus* L. and Var. Cf. DTr IV, no. 139 (pp. 655-656): *al-qittā* ‘*al-barrī*’, also known as *qittā* ‘*al-ḥimār*’, i.e., *Ecballium elaterium*, squirting cucumber.

qulquṭār قلقطار chalcitis: Cf. Ibn Ḡanāḥ II, no. 817 (pp. 952-953): *qulquṭār* is chalcitis, a variety of vitriol.

qūqāyā قوقايا qūqāyā: Cf. Galen, *Meth. Med.* III, XIV (p. 971:8): a compound drug composed of aloes, scammony and colocynth. Cf. Fellmann, *Qalānisī*, no. 3. 29. 1. (pp. 205-206): *Qūqāyā* cleanses the head, hence the name, as al-Qalānisī traces the name back to the Greek and the Syriac word for ‘head’. The name *ḥabb al-qūqāyā* is a tautology, as the Greek word *qūqāyā* means berry, grain, the same as the Arabic *ḥabb*.

qurṣ, **aqraṣ** أقراص قرص ج. pastille: Cf. Fellmann, *Qalānisī*, no. 3. 75: pastille.

rāwand ṣīnī راوند صيني Chinese rhubarb: Cf. DTr III, 2 (p. 344): Chinese rhubarb, *Rheum palmatum* var. *tanguticum*, Polygonaceae, used as a laxative and astringent for gastrointestinal ailments. Cf. Schmucker, *Firdaus*, no. 321 (pp. 205-206): *rāwand ṣīnī* at times designates a separate species, at times a synonym for *rāwand*,

for which it is representative as the most well-known species: Chinese rhubarb, usually called *Rheum palmatum* var. *tanguticum*, medicinal rhubarb, native to high Asia (Tibet and the Chinese provinces of Kansu and Shensi). Cf. Clementi, p. 407ff.: *Da huang*. Chinese rhubarb has been used as a purgative drug in Chinese herbal medicine for over two thousand years. The root and the stalk are used in medicine, while the leaves are poisonous.

rāziyānağ aḥḍar رازيانج أخضر green fennel: Cf. DTr III, no. 66 (p. 419):

Foeniculum vulgare L. et. al., several varieties of fennel. Both the seeds and the root were used in medicine.

rayāḥīn ريحان fragrant herbs: Cf. Schmucker, *Firdaus*, no. 332 (p. 209): plural of *rayḥān*, a generic name for fragrant herbs that are similar to basil.

riğla رجلة purslane: Cf. Ibn Ğanāḥ II, no. 751 (pp. 892-893): common purslane, *Portulaca oleracea* L., Portulacaceae.

rummān رمان pomegranate: Cf. DTr I, no. 81 (p. 170): The fruit of *Punica granatum* L. et. al., Punicaceae. Cf. Dioscorides, *GHD*, Book I, 151 (p. 80): Dioscorides identifies three sorts of pomegranates: the sweet, that is the best for the stomach; a sharp one, that helps a burning stomach; and a species that in its taste resembles wine, that is of middle strength. They all are tasty and good for the stomach, yet do not nourish.

rummāniyya رمانية Rummāniyya: Cf. Nasrallah, p. 279: a dish prepared with chicken.

sabistān سبستان sebesten: Cf. Ibn Ğanāḥ II, no. 666 (pp. 825-826): “*sabistān* is a common Arabic name ‘sebesten fruits’ produced by *Cordia myxa* L. (‘Assyrian plum’, Boraginaceae).”

safarğal سفرجل quince: Cf. DTr I, no. 87 (p. 176): *Cydonia oblonga* Mill., Rosaceae. Cf. Galen, *Alim. Fac.* II:23 (pp. 89-90): Galen, calling these Cydonian and Strouthian apples, mentions that quinces are more astringent than other apples, thus good for preserving. He refers to his own medication of the Strouthian apple, i.e., quince, containing quince juice, honey, white pepper, ginger, and vinegar, that he used to treat people with anorexia.

sarīs سريس endive: Cf. DTr II, no. 114 (p. 280): Possible species are *Cichorium intybus* L. et. al., and *Cichorium endivia* L. et. al., Compositae. See also *hindibā*.

sawīq al-ša'īr سويق الشعير Barley gruel: Cf. Ibn Ġanāḥ II, no. 1038 (p. 1153): *sawīq*, gruel. See also *mā' al-ša'īr*.

sukkar سكر sugar: Cf. DTr II, no. 65 (p. 238): *Saccharum officinarum* L., cane sugar, or sugar cane. It is said to have been brought from India to Egypt in the ancient times. Used both for its medicinal effects and for its taste.

sukkar ṭabarzadī سكر طبرزدی Tabarzac sugar: Cf. Nasrallah, p. 602: “*ṭabarzac* (طبرزد) *tabarzan* (تبرزن) *tabarzal* (تبرزل) fine-quality white and refined cane sugar *qand*. It is usually sold in solid molded cone-shaped masses as they take the shape of the clay vessels in which cane sugar is washed and refined. [...] The medieval name *ṭabarzac* is not descriptive of the quality of the sugar itself as much as the way it is used: *tabar* is a Persian loan word for hatchet or axe used to chisel the amount needed from the solid mass of sugar.” Cf. Ibn Ġanāḥ II, no. 634 (p. 791): crystalline sugar.

sikanġubīn سکنجبین Oxymel, or sour honey: Cf. Fellmann, *Qalānisī*, no. 3. 84. (pp. 267-268): a potion composed of vinegar and honey. For pure oxymel one part of wine vinegar, two parts of fresh water, and three parts of *ṭabarzac* sugar are boiled until the liquid becomes consistent. This recipe could be used as a base, and altered by changing the honey to sugar, or the vinegar to quince juice and the like. Alkaloids can be extracted from the drugs better with vinegar than with water, because they form a soluble compound with it. Thus, vinegar extracts are usually stronger than decoctions made with water. Although this chemical process naturally was unknown, the increased effect was most evidently noticed. As for sugar and honey, that generally were considered interchangeable, they were credited for enhancing the moist properties. Thus, oxymel helped to combine the power of drugs with the medicinal effects of vinegar and sugar.

sikbāġ سكباج *sikbāġ*: Cf. Nasrallah, pp. 248-255: a variety of beef stews soured with vinegar.

silq سلق chard: Cf. Ibn Ġanāḥ II, no. 647 (pp. 807-808): chard, *Beta vulgaris* L.

summāqīyya سماقية *summāqīyya*: Cf. Nasrallah, p. 299: a meat dish with strained sumac juice. As for sumac, cf. Ibn Ġanāḥ II, no. 1003 (p. 1120): tanner’s sumach, *Rhus coriaria* L., and smokebush, *Cotinus coggygria* Scop.; Anacardiaceae.

sunbul al-ṭīb سنبل الطیب Indian nard: Cf. Schmucker, *Firdaus*, no. 403 (p. 248): *Valeriana jatamansi* Roxb. (Valerianaceae), Indian nard.

sūs سوس liquorice: Cf. Ibn Ğanāḥ II, no. 695 (pp. 846-847): “The term *sūs*, derived from a Semitic root, is the common Arabic name of liquorice, the root of *Glycyrrhiza glabra* L.”

šāhasbaram شاهسبرم *šāhasbaram*: Cf. Nasrallah, p. 671: شاهسبرم also *šāhasfaram*, شاهسفرم, is an aromatic variety of mint with small leaves that also helps to induce sleep and relieve headache. Cf. Ibn Ğanāḥ II, no. 987 (p. 1105-1106): one of several variant spellings of *šāh-išbaram*, *rayḥān al-malik*, or *iklīl al-malik*, a variety of basil with small leaves, probably bush basil (*Ocimum minimum* L., Lamiaceae).

šahm شحم fat: Cf. DTr II, no. 63 (p. 237): Fat, lard, tallow, etc.; fatty substances in general are among the oldest medical substances as they are easily obtained and durable. The variety of fatty substances used depends on the number of native, mainly domestic, animals. In Islam, pork fat was not used, and animal fats were replaced by vegetable oils as much as possible. In medicine, fats were used for rubbing in, and as a basis for plasters, ointments, and waxes.

ša‘īr شعير barley: Cf. DTr II, no. 72 (p. 242): parent plant for barley is *Hordeum vulgare* L, and var., Gramineae.

šam شمع wax (Ibn Ğanāḥ II, no. 539, p. 713).

šarāb, ašriba أشربة syrup, potion: Cf. Fellmann, *Qalānisī*, no. 3. 87. (p. 269): Syrups prepared of fruit and other juices, boiled with sugar and honey until they have a consistency similar to oxymel or apple syrup. When you squeeze fruit or vegetables, the resulting juice is ‘press juice’, i.e., sap (*uṣāra*). When the juice is thickened by boiling, or by leaving it in the sun, it is called ‘thickened juice’ (*rubb*), and when sugar is added and it is thickened, it is called syrup (*šarāb*). Syrup contains more sugar in relation to fruit.

šarāb al-‘asal شراب العسل melicratum: Cf. Riddle, *Dio. Pharm. Med.*, p. 144:

“Very popular as a drink and as a medicine in antiquity was melicraton, or water mead (V. 9). This was a mixture of honey and water allowed to ferment. Among its usages was one for coughs.”

ša‘tar صعتر oregano: Cf. Ibn Ğanāḥ I, no. 365, (p. 540): “ša‘tar is an Arabic name of oregano (*Origanum vulgare* L., Lamiaceae)”.

šamġ ‘arabī صمغ عربي gum Arabic: Cf. Schmucker, *Firdaus*, no. 460 (p. 282): gum from *Acacia gummifera*, *A. spirocarpa*, i.e., *Mimosa gummifera*, *A. vera*, i.e.,

Mimosa nilotica. Cf. Abdelkareem (p. 184): the fluid from Acacia seyal or Acacia senegal trees, used in traditional medicine for pain relief, as a glue, and a number of other ailments.

ṣandal صندل sandalwood: Cf. Schmucker, *Firdaus*, no. 461: white sandalwood, *Santalum album* L. (Santalaceae); red sandalwood, *Pterocarpus santalinus* L. (Papilionaceae). The term *ṣandalayn* can be understood as a designation for the two common types, i.e., red sandalwood and white sandalwood, since they often are mentioned side by side. Cf. Dozy, pp. 358-359, on the sobriquet *maqāṣīrī*: white sandalwood, *sandalos cetrinos*, of yellowish colour. This yellow, pale species is called *santalum citrinum* in pharmacies, in Latin *santalum pallidum* or *santalum odoratum*. There are several kinds of sandal: the best is the yellow sandal, that has an aromatic smell, and it is called *maqāṣīrī*. *Maqāṣīrī* is yellow, *Ġawrī* is white. Cf. DTr III, no. 38 (p. 385): ‘Abdallāh b. Šāliḥ says that even thyme, *Thymus serpyllum* L., Labiatae is called *ṣandal*.

tamr hindī تمر هندي tamarind: Cf. Ibn Ġulġul, *Dio.*, no. 5 (p. 30): *Tamarindus indica* L., Leguminosae.

taranġubīn ترنجبین manna: Cf. Maimonides, *Glossary*, no. 386: Arabicised from the Persian taranġubīn “honey of dew”, that corresponds to the Biblical *mān*.

tīn تين fig: Cf. DTr I, no. 107 (p. 192): *Ficus carica* Moraceae, native to the Near East and highly valued since earliest antiquity.

tuffāḥ تفاح apple: Cf. DTr I, no. 86 (p. 175): understood by most authors as *Malus sylvestris* [L.] Mill. (*Pyrus Malus* L.).

ṭabāhiġāt طباهجات ṭabāhiġāt: Cf. Nasrallah, (pp. 617-618): A dish made of red meat, seasoned with spices and herbs.

ṭabāšīr طباشير tabasheer, bamboo chalk; Cf. Ibn Ġanāḥ II, no. 904, (p. 1035): “‘Tabasheer’ is a white substance obtained from the nodal joints of bamboo (*Bambusa bambos* (L.) Voss).”

ṭīn maḥtūm طين مختوم terra sigillata; sealed earth: Cf. Ibn Ġanāḥ II, no. 569, (p. 739): terra sigillata, famous red earth, from the isle of Lemnos. Cf. Riddle, *Dio. Pharm. Med.*, p. 162: “Taking dirt as a medicine appears at first to be ‘dirty, ignorant medicine’. Any soil scientist and a few historians of pharmacy will know that dirt is a word that describes a variety of minerals, some of which have medicinal use.”

ṭīn rūmī طين رومي Roman earth: Cf. Ibn Ḡanāḥ II, no. 1054, (p. 1166): Roman earth, *ṭīn rūmī*, according to al-Rāzī is the same as *ḥawātīm al-buḥayra*, that is listed as equal to terra sigillata in his *Hāwī*. Cf. Käs, *Mineralien II*, pp. 845-847: *ṭīn rūmī*, another name for *ṭīn maḥtūm*, terra sigillata.

uṣṭumāḥīqūn, uṣṭumāḥīqūnāt اسطماخيكون ج. اسطماخيكونات stomachic: Cf. Fellmann, *Qalānisī*, no. 3. 29. 3. (p. 207): Uṣṭumāḥīqūn, a stomach pill, a purgative remedy, deriving from the Greek word *στομαχικός*.

utruḡḡ أترج citron: Cf. DTr I, no. 90 (p. 178): Citrus Limon [L.] Burm. (Citrus medica L.) et. al.

‘unnāb عناب jujube: Cf. Ibn Ḡanāḥ II, no. 736 (p. 542): Ziziphus jujuba Mill., also called Chinese date. Cf. Galen, *Alim. Fac.* II:32 (p. 95): Galen viewed jujube only as “poorly nutritious and difficult to concoct, and at the same time bad for the stomach”.

‘uṣāra عصارة sap: Cf. Fellmann, *Qalānisī*, no. 3. 53. (p. 239): sap, *‘uṣāra*, is a juice that is pressed out of the drug without adding water. Ibid. p. 269: When you squeeze fruit or vegetables, the resulting juice is ‘press juice’, i.e., sap (*‘uṣāra*).

wabar al-arnab وبر الأرنب hare’s fur: in Ms. Escorial an ingredient in a dressing.

ward ورد rose: Cf. DTr I, no. 68 (p. 155): Genus Rosa, numerous species of the Rosaceae family.

zabīb زبيب raisin: Cf. Ibn Ḡanāḥ I, no. 488 (p. 659): Small, seedless grapes, or raisins, also known as *kišmiš*.

za‘farān زعفران saffron: Cf. DTr I, no. 23 (p. 108) Crocus sativus L. et. al., Iridaceae. Cf. Lane, p. 1231: saffron, a perfume and a dye.

zāḡ زاج vitriol: Cf. Schmucker, *Firdaus*, no. 336 (p. 210): vitriol, mostly iron, copper, or zinc sulfate (crystallised and containing water of crystallisation).

zāḡ aḥḍar زاج أخضر green vitriol: Cf. Ibn Ḡanāḥ I, no. 313, (pp. 494-495): Green vitriol (*zāḡ aḥḍar*) is the same as Cyprian vitriol (*zāḡ Qubrusī*). Dozy (p. 610) says it is iron sulfate.

zāğ aṣfar زاج أصفر yellow vitriol: Cf. Ibn Ğanāḥ I, no. 314, (p. 495): yellow vitriol (*zāğ aṣfar*) is the vitriol of the shoemakers (*zāğ al-asākifa*). According to most Arabic sources it is a synonym for *qulqutār*, chalcitis (χαλκίτις) for Dioscorides.

zanğabīl زنجبیل ginger: Cf. DTr II, no. 144 (p. 306): *Zingiber officinalis* Roscoe, Zingiberaceae.

zīrbāğā زيرباجة *zīrbāğā*: Cf. Nasrallah, p. 620: A delicate stew made of birds, lightly seasoned, and soured with vinegar and balanced with sugar, praised by many for its perfectly balanced properties. Cf. Fellmann, *Qalānisī*, no. 3. 67. (p. 252): broth or spoon-meat.

Key to index of *materia medica*

(English–transliterated Arabic form)

aromatic substances	<i>afāwīh</i>
‘adasiyya, a lentil dish	‘ <i>adasiyya</i>
acacia gum	<i>aqāqiyā</i>
apple	<i>tuffāh</i>
barberry; berberis	<i>barbārīs</i>
barley	<i>ša ‘īr</i>
barley broth	<i>mā’ al-ša ‘īr</i>
barley gruel	<i>sawīq al-ša ‘īr</i>
black cardamom	<i>qāqulla</i>
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Chinese rhubarb	<i>rāwand şīnī</i>
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plum	<i>iġġāş</i>

pomegranate	<i>rummān</i>
purgative drug	<i>dawā` mushil</i>
purslane	<i>riġla, baqla ḥamqā`</i>
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Index of weights and measures

The basis of all Islamic weighting is formed by the *dirham*, deriving from the Greek drachma, and the *mitqāl*, deriving from the Roman-Byzantine solidus. According to Islamic law, the relation between *mitqāl* and *dirham* is 10:7, in practice, 3:2. However, a multitude weights in the Islamic world, varying according to time and place, have developed, and they denote somewhat varying weights.¹ In the case of al-Rāzī, one could assume that the values of different weights and measures are the ones that were used in Iraq.

The weights and measures presented below are mentioned in Hinz, *Islamische Masse und Gewichte*, and more specifically for al-Rāzī, in Kahl, *The Sanskrit, Syriac and Persian Sources in the Comprehensive Book of Rhazes*.

Dirham and mitqāl

Hinz suggests that we can assume the standard value of one *dirham* to be of 3.125 grams, unless specified otherwise. By using the standard value of 3.125 g for a *dirham*, applied in the ratio of 7:10 to reach the weight of the canonical *mitqāl*, the latter weighs 4.464 g.² These values seem to be the same for Iraq and Syria, and comparing with data provided by different authors the value of *mitqāl* and *dirham* safely can be assumed to be as attested above.³

A measure called *dirham al-kayl* is mentioned in Ms. Escorial as well.⁴ Since one *dirham al-kayl*, ‘weight *dirham*’, is $\frac{2}{3}$ *mitqāl*, *dirham al-kayl* is exactly 3.125 g.⁵ Hence, it seems to denote the exactly same measure as a regular *dirham*. Kahl suggests that *dirham* and *mitqāl*, as used by al-Rāzī, correspond to one *dirham* being 3.13 g and one *mitqāl* 4.46 g.⁶

¹ Hinz, p. 1.

² Hinz, pp. 3-4.

³ Hinz, p. 5.

⁴ Spelled in Ms. Escorial as *dirham kaylā/kaylan*.

⁵ Hinz, p. 3.

⁶ Kahl, *Rhazes*, p. 67.

Raṭl

An Umayyad *raṭl* from Syria from 744 AD weighs 337.55 g. It should represent a provincial pound to 72 *miṭqāls*. A *raṭl* from the Fatimid times, the weight of which is 140 *dirhams*, weighs 437.2067 g, confirming the weight of a *dirham* as 3.123 g.⁷

The *raṭl* of Baghdad was canonical: it was stated by one school of law to consist of 128 $\frac{4}{7}$ *dirhams*, and according to another of 130 *dirhams*. Around the year 1050, the authority of Mar Eliya of Nisib consistently based its value to be 130 *dirhams* (i.e., 406.25 g).⁸ Kahl's definition of a *raṭl* is 406 g.⁹

Ūqiyya

The *ūqiyya*, or ounce, is basically $\frac{1}{12}$ *raṭls*.¹⁰ The ounce of Baghdad was $10 \frac{5}{6}$ *dirhams*, i.e., 33.85 grams.¹¹ For *ūqiyya*, Kahl suggests the weight of 33 g.¹²

<i>dirham, darāhim</i>	درهم ج. دراهم	<i>dirham</i> (3.125 g)
<i>dirham al-kayl</i>	درهم الكيل	<i>dirham al-kayl</i> (3.125 g)
<i>ḡuz', aḡzā'</i>	جزء ج. أجزاء	part
<i>miṭqāl, maṭāqīl</i>	مئقال ج. مئاقيل	<i>miṭqāl</i> (4.46 g)
<i>raṭl, arṭāl</i>	رطل ج. أرطال	<i>raṭl</i> , pound (406.25 g)
<i>rub', arbā'</i>	ربع ج. أرباع	quarter
<i>ūqiyya, -āt</i>	أوقية -ات	<i>ūqiyya</i> , ounce (33.85 g)

⁷ Hinz, p. 3.

⁸ Hinz, p. 31.

⁹ Kahl, *Rhazes*, p. 67.

¹⁰ Hinz, p. 34.

¹¹ Hinz, p. 35.

¹² Kahl, *Rhazes*, p. 67.

Index of instruments and utensils

<i>hāwūn, hawāwīn</i>	هاوون ج. هواوين	mortar
<i>ḥirqa, ḥiraq</i>	خرقة ج. خرق	cloth
<i>ḥuqna, ḥuqan</i>	حقنة ج. حقن	enema
<i>ibra, ibar</i>	إبرة ج. إبر	needle
<i>kūz faḥḥār, akwāz faḥḥār mibḍa', mabāḍi'</i>	كوز فخار ج. أكواز فخار مبضع ج. مباضع	ceramic jug
<i>miḥḡama, maḥāḡim</i>	محجمة ج. محاجم	scalpel
<i>qidr, quḍūr</i>	قدر ج. قدور	cupping glass
<i>šafra, šifār</i>	شفرة ج. شفار	cooking pot
<i>sinnāra, sanānīr</i>	سنارة ج. سنانير	blade
<i>zuḡāḡa, -āt</i>	زجاجة -ات	crochet needle; hook
<i>ẓarf zuḡāḡ, ẓurūf zuḡāḡ</i>	ظرف زجاج ج. ظروف زجاج	bottle
		receptacle of glass

Index of places in Ms. Escorial

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'Abdullāh al-Rāzī	عبد الله الرازي	2:20
Abū Bakr Muḥammad ibn Zakariyyā' al-Rāzī	أبو بكر محمد بن زكرياء الرازي	0:2, 1:2, 12:2
<i>Abuqrāt</i> ; Hippocrates	أبقراط	1:5, 1:13, 2:5, 2:7, 2:37, 3:4, 5:5, 7:8, 8:14
<i>Arasistrāṭus</i> ; Erasistratus	أرسطرطس	1:3
<i>Ġālīnūs</i> ; Galen	جالينوس	1:2, 1:3, 2:13, 2:19, 2:25, 2:27, 2:31, 2:39, 5:5, 6:4, 7:8, 8:15, 11:3, 12:7, 13:2
Al-Ma'mūn	المأمون	9:8
Muḥammad ibn 'Abd al-Malik al-Zayyāt	محمد بن عبد الملك الزيات	2:26
<i>Qusṭās</i> ; Qusṭā ibn Lūqā	قسطاس	2:20
<i>Rūfus</i> ; Rufus of Ephesus	روفيس	3:5

Index of works cited in Ms. Escorial

<i>Al-adwiyya al-mufrada</i>	الأدوية المفردة	On Simple Drugs	Galen	2:39
<i>Al-ahwiyya wal-buldān</i>	الأهوية والبلدان	Airs, Waters, Places	Hippocrates	5:5
<i>Afīdīmiyya</i>	أفيديميا	Epidemics	Hippocrates	3:4
<i>Afīdīmiyya</i>	أفيديميا	Epidemics (commentary)	Galen	2:25
<i>Fīmā yas 'al 'anhu al-ṭabīb al-'alīl</i>	فيما يسأل عنه الطبيب العليل	Medical Questions	Rufus of Ephesus	3:5
<i>Ḥīlat al-bur'</i>	حيلة البرء	Method of Medicine	Galen	11:3
<i>Al-Maqāla fī l-Qūwwa wal-ḍa'f</i>	المقالة في القوة والضعف	Treatise on Strength and Weakness	Qusṭā ibn Lūqā	2:20

Index of pharmaceutical forms

<i>ḥabb, ḥubūb mā'</i>	حب ج. حبوب ماء	pill
<i>maṭbūḥ -āt</i>	مطبوخ - ات	water, drug extract made with water decoction
<i>qurṣ, aqrāṣ</i>	قرص ج. أقراص	pastille
<i>ribāṭ -āt</i>	رباط - ات	ligature
<i>rifāda -āt</i>	رفادة - ات	dressing
<i>šarāb, ašriba</i>	شراب ج. أشربة	syrup, potion; drink
<i>'iṣāba, 'aṣā'ib</i>	عصابة ج. عصائب	band
<i>'uṣāra</i>	عصارة	sap

Index of terms used in preparations of drugs

<i>aḍāba</i>	أذاب	melt
<i>aḍāfa</i>	أضاف	add
<i>‘aḡana</i>	عجن	knead
<i>aḥaḍa</i>	أخذ	take
<i>alqā ‘alayhi</i>	ألقى عليه	add
<i>anqā</i>	أنقى	cleanse, purify
<i>‘ašara</i>	عصر	press, squeeze
<i>ḍamada</i>	ضمّد	dress, bandage
<i>daqqa</i>	دقّ	pound
<i>ḡaffafa</i>	جفّف	dry
<i>ḡama ‘a</i>	جمع	bring together
<i>ḡaraša</i>	جرش	crush
<i>ḥalla</i>	حلّ	dissolve
<i>marasa</i>	مرس	soak
<i>naḥala</i>	نخل	sieve
<i>naqa ‘a</i>	نقع	soak, infuse, macerate
<i>naza ‘a al-raḡwa</i>	نزع الرغوة	skim
<i>nazala ‘an al-nār</i>	نزل عن النار	remove from the fire
<i>qarraša</i>	قرّص	form into a pastille
<i>qašara</i>	قشر	peel
<i>rawwaqa</i>	روّق	clarify, filter
<i>šabba</i>	صبّ	pour
<i>šadda fī ḥirqa</i>	شدّ في خرقّة	tie into a cloth
<i>šaffā</i>	صفّى	filter, clarify
<i>sahaqa</i>	سحق	grind
<i>ṭabaḥa</i>	طبخ	boil, cook
<i>taraka</i>	ترك	leave

Index of prescriptions

This chapter presents the prescriptions that occur in Ms. Escorial in an edited form. This chapter also contains examples of prescriptions of drugs mentioned, but not explained in Ms. Escorial.

Chebulic myrobalan pill (§2:28)

Seedless chebulic myrobalan fruit

Cover the seedless chebulic myrobalan fruits with water and place it in the sun in high summer for forty days until the water is gone. Stir some times daily. Form it into a pill, and consume with sugar and scammony.

Melicratum (§10:13)

clear honey	1 <i>ratl</i>
fresh water	5 <i>ratls</i>
long pepper	
ginger	
cinnamon	
Indian nard	
mastic	
cloves	1 <i>dirham</i> each

Take one *ratl* of honey and pour five *ratls* of water on it in a new pot. Cook on low fire and skim. When it gets close to the consistency of julep, take one *dirham* of long pepper, ginger, cinnamon, Indian nard, mastic, and cloves, and grind them well. Then, compress them in a linen cloth and suspend the cloth in the pot and cook until the liquid reaches the consistency of julep. Let the cloth soak in the drink. Remove from the fire and let cool down.

Mayba (§10:14)

quince juice	20 <i>ratls</i>
grape jelly	10 <i>ratls</i>
skimmed honey	5 <i>ratls</i>
ginger	
mastic	
black cardamom	
small cardamom	
cinnamon	
cloves	
saffron	20 <i>dirhams</i> each
musk	1/8 <i>dirham</i>

Take fresh, juicy, sour quinces, peel them, clean their inside and grind them in a stone mortar. Squeeze from their juice 20 *ratls*. Add 10 *ratls* of grape jelly and infuse it with the residues of the quince in some quince juice. Filter. Put the juices in a pot, boil gently on embers, and skim until half of the liquid remains. Remove from the fire. Then filter it for three days, a few times every day, in a thick, twofold cloth. After three days, add five *ratls* of skimmed honey in the mixture. Then crush and grind 20 *dirhams* of ginger root, mastic, black cardamom, small cardamom, cinnamon, cloves, and saffron, and bind them tightly in a thin linen cloth. Suspend the cloth in the pot and cook it altogether for a second time on low fire. Soak the spices in the liquid time after time until the mixture reaches the consistency of syrup and becomes clear. Then add 1/8 *dirham* of ground musk. Put the syrup in a glass receptacle. Leave the cloth soaking in it for two weeks, after which you remove it. If you want, you can let the spices sink to the bottom of the glass receptacle.

Mayba II (§10:15)

quince juice	1 part
clear, skimmed honey*	1 part
(*alt. crystalline sugar)	
very sour vinegar	3/4 part

Cook one part of quince juice and one part of honey (or crystalline sugar for whoever is of hot disposition) gently on embers, skim it, keep boiling until it reaches the consistency of syrup. Whoever wants sourness may add vinegar. This prescription is similar to Galen's plain quince wine, see Kahl, *Ibn al-Tilmīd*, p. 241.

Barley broth (§11:12)

barley	2 parts
peeled lentils* (*alt. plum or jujube)	1 part

Cook the barley and the lentils [in water] – or if you want, you may use plum or jujube.

This prescription is possibly incomplete. According to Ibn Māsawayh’s prescription, barley broth is made by washing new or old barley with the husk, after which it is washed clean. It is soaked for a whole hour, drained, and covered with a thick cloth overnight. In the following day the barley is pounded in a mortar, cleaned from the husk, and put in a clean pot. Thereafter it is cooked with water, for each *kayl* of barley 14 *kayls* of water, simmering on low fire until it thickens. It is consumed with or without sugar.¹³

Decoction I: A decoction that loosens the bowels and prevents the surplus of blood (§11:8)

[water]	
tamarind	2 <i>ūqiyyas</i>
plum	
jujube	
large sebesten	10 grains of each
dry, red rose	
blue violet leaves	
peeled lentils	
barberry	
endive seed	
purslane seed	3 <i>dirhams</i> each
dry coriander	2 <i>dirhams</i>
endive leaves	
nightshade leaves	1 part of each
kernel of cassia fistula cane cleaned from its seed	1 <i>ūqiyya</i>

Take two *ūqiyyas* tamarind, 10 grains of plum, jujube and sebesten, three *dirhams* of dry, red rose, blue violet leaves, peeled lentils, barberry, endive seeds and purslane seeds, two *dirhams* of dry coriander, and a part of endive and nightshade leaves. Boil on low fire until the water becomes red and thickens. Add half a *raṭl*

¹³ Adapted from Nasrallah, p. 448. Barley broth is mentioned in §2:9, 11:5, 11:7, 11:11, and 11:12.

of clear water and soak the kernel of the cane of cassia fistula in the decoction. Filter for a moment.

Decoction II: A less cooling decoction that loosens the stomach (§11:10)

[water]	
yellow myrobalan	6 <i>dirhams</i>
seedless raisins	
tamarind	1 <i>ūqiyya</i> each
plum	
jujube	
sebesten	10 grains of each
cassia fistula	1 <i>ūqiyya</i>

Boil the ingredients apart from the cassia fistula on low fire until the water thickens a little. Then filter the water, and take half a *raṭl* of the filtered water to dissolve one *ūqiyya* (or more, according to strength) of cassia fistula in it. Use when needed.

Decoction III: A decoction that loosens the stomach for whoever is afraid of his disposition turning cold (§11:13)

[water]	
yellow myrobalan, stoneless	6 <i>dirhams</i>
tamarind	1 <i>ūqiyya</i>
seedless raisin	1.5 <i>ūqiyyas</i>
red rose, dry	
violet leaves	4 <i>dirhams</i> of each
plum	
jujube	
sebesten	10 grains of each
fennel seeds, green	a handful
cassia fistula	
manna	3/4 <i>ūqiyya</i> of each

Boil the ingredients apart from cassia fistula and manna in water on low fire. Filter. Take half a *raṭl* from the filtered water and soak the cassia fistula and manna in it. Filter another time, and put aside for fourteen days.

Pastille I: A pastille that extinguishes the surplus of blood, cleanses it, strengthens the stomach and opens the obstructions of the liver (§11:14)

dry, red rose	10 <i>dirhams</i>
purslane seeds	
endive seeds	
barberry	
gum Arabic	
white tragacanth	2 <i>dirhams</i> of each
white sandalwood	
chalk	1.5 <i>dirham</i> of each
upper part of peeled liquorice root	3 <i>dirhams</i>
Chinese rhubarb	1 <i>dirham</i>
saffron	0.5 <i>dirham</i>
camphor (optional)	1/4 <i>dirham</i>

Pound the ingredients and knead them in boiled, filtered nightshade pulp. Form pastilles à one *dirham* of weight, and let dry in the shade. Take one pastille with every meal with one *ūqiyya* of oxymel. If the patient has coarseness in the chest, consume the pastilles with sweeter syrups, such as cherry syrup or the syrup made of both types of pomegranates.

Pastille II: A pastille that is less cooling than the first one (§11:15)

dry, red rose	8 <i>dirhams</i>
endive seeds	
barberry seeds	
purslane seeds	
gum Arabic	
tragacanth	
starch	
peeled melon seeds	
spikenard	
mastic	
manna	2 <i>dirhams</i> of each
liquorice root, peeled	4 <i>dirhams</i>
chalk	1 <i>dirham</i>
Chinese rhubarb	1.5 <i>dirham</i>
saffron	0.5 <i>dirham</i>

Infuse manna in water and add the rest of the components. Form pastilles à 1.5 *dirhams* of weight. Let dry in the shade. Consume with the described syrups.

Galen's remedy (§13:3)

frankincense	1 part
aloe	1/2 part
egg white	
rabbit fur*	
(*alt. cobweb or a soft cotton cloth)	

Mix one part of frankincense and 0.5 part of aloe with egg white until it reaches the consistency of honey. Use more aloe for dry bodies. Then add rabbit fur, and apply it on the spot. If rabbit fur is not available, you may use cobweb or a cotton cloth in its stead.

Dressing I: Prescription of another dressing (§13:4)

aloe	
frankincense	
dragon's blood	equal parts of each
egg white	

Knead the ingredients into a firm dough, and do as is described in the previous prescription.

Dressing II: 'A Christian man's dressing' (§13:5)

burned chalcitis

Put the chalcitis in a ceramic jug, coat its head with clay, and insert it into the oven. [Burn, and use the burned chalcitis as a dressing.]

Dressing III

Another strong dressing (§13:6)

frankincense peels	
green vitriol	
myrrh	
chalcitis	
<i>terra sigillata</i>	
goatsbeard sap	
mastic	
acacia gum	1 part of each
cobweb	
egg white	

Grind the ingredients. Coat the spot with some egg white and the ground drugs. Press some cobweb and egg white on the spot.

Dressing IV: Another dressing to treat a swelling in the muscle, nerve, and flesh (§13:8)

buckthorn	
aloe	
myrrh	equal parts
Roman earth	
glaucium	
red and white sandalwood	
litharge	1/2 part of each
coriander water	
fat from a ram's tail on a chard leaf	

Grind equal parts of buckthorn, aloe, and myrrh together with 1/2 part of Roman earth, glaucium, two sandalwoods, and litharge into a flour. Pound and knead into dough in coriander water. Apply on the opening of the vein, and cover with a light cloth. Cover the opening of the vein itself with fat from a ram's tail on a chard leaf.

Dressing V: Another dissolving dressing (§13:9)

egg yolk, roasted
rose oil

Take the egg yolk of a roasted egg and mix with rose oil according to the need. Knead the ingredients into a dough and cover the spot with it. Cover with a light cloth.

Dressing VI: A more dissolving dressing (§13:10)

chicken fat	
rose oil	5 <i>mitqāls</i>
white wax	3 <i>mitqāls</i>
tragacanth	
litharge	
ceruse	equal parts

Melt five *mitqāls* of chicken fat and rose oil in three *mitqāls* of white wax on fire. Remove from the fire, and add tragacanth, litharge, and ceruse. Use according to the need.

This section presents some prescriptions for drugs that are mentioned, yet not described, in Ms. Escorial. In general, for an abundance of prescriptions for treating a great number of medical conditions with drugs, ointments, ligatures, cataplasms etc., see Kahl, *Ibn al-Tilmīd* and *al-Kindī, Aqrābādīn*.

Fruit syrups: Several drinks prepared with different fruits are featured in Ms. Escorial. According to Fellmann, these syrups, or potions (in Arabic *šarāb*, pl. *ašriba*), are prepared of fruit and other juices, boiled with more sugar in relation to fruit, until a thick consistency is achieved.¹⁴ For example, a citron syrup by *Ibn al-Tilmīd* is prepared of sour citrons and superb sugar. The juice of the sour citrons is pressed after the seeds are removed. Into each *raṭl* of sour citron juice one adds one *mann* of superb sugar. It should be left until the sugar melts without boiling, and then boiled on low fire. At the end, the syrup is removed from the fire, the scum removed, and the syrup is left to gain consistency.¹⁵

Rose syrup

by Ibn al-Tilmīd¹⁶ (§10:3 & 10:8)

red roses	1 part
water	10 parts
pure sugar	similar amount of the remaining water

Cook one part of red roses in ten parts of water until one part of the water is gone. Press the roses and keep immersing them depending on the strength of the purgative effect you wish to achieve – stronger if one tenth of the water is left, weaker if half of it remains. Take the water in which the roses have been immersed and melt into it a similar amount of pure sugar. Cook until the mixture reaches the consistency of oxymel. Serve it by using four *ūqiyyas* of the product with thirty *dirhams* of ice. The ice makes the purgative effect stronger, and yellow bile and other fine humours are purged.

¹⁴ Fellmann, *Qalānisī*, p. 269.

¹⁵ Kahl, *Ibn al-Tilmīd*, p. 240.

¹⁶ Adapted from Kahl, *Ibn al-Tilmīd*, p. 237.

Rose syrup

by Qustā ibn Lūqā¹⁷ (§10:3 & 10:8)

dry Damascene rose	6 <i>ūqiyyas</i>
rain water (or fresh water)	20 <i>raṭls</i>
sugar water*	1/2 <i>raṭl</i> per each <i>raṭl</i>
(*alt. skimmed honey)	

Pour rain water or fresh water on the Damascene rose. Put into a long-necked bottle, close firmly. Boil profusely, remove from the fire, bury in straw for a day and a night. The following day, filter the extract, throw away the rose, pour half a *raṭl* of sugar water or skimmed honey over each *raṭl* of the extract. Boil until it reaches the consistency of julep. Take before and after meals, God willing.

Oxymel

by Ibn al-Tilmīd¹⁸ (§10:3, 10:10, 11:4, 11:7, 11:14)

water
wine vinegar
sugar
egg white

For each *mann* of sugar, take eight *ūqiyyas* of wine vinegar and 1/4 *raṭl* of fresh water. Beat the white of two eggs into the water, mix, and boil. Skim off the scum repeatedly until the mixture is clear and ready to be stored. Alternatively, you may let the sugar dissolve naturally, without cooking on fire.

Qūqāyā pill

by Ibn al-Tilmīd¹⁹ (§11:3)

aloe	
mastic	
absinthe sap or leaves	
scammony	
colocynth pulp	equal parts of each
celery water	

Take equal parts of aloe, mastic, absinthe, scammony, and colocynth pulp. Mix with celery water. Make pills by using 1.5 - 2 *dirhams* of the mixture. According

¹⁷ Adapted from Qustā ibn Lūqā, *Numbness*, 210, p. 74.

¹⁸ Adapted from Kahl, Ibn al-Tilmīd, p. 237.

¹⁹ Adapted from Kahl, Ibn al-Tilmīd, pp. 197-198.

to Ibn al-Tilmīd, a dose comprising two *dirhams*, with the amount of 4 *dāniqs* of both scammony and colocynth pulp, is very strong. He says that a dose of 0.5 *dirham* would result in a weak remedy, while a dose of one *dirham* is optimal.

Julep

by Ibn Sīnā²⁰ (§2:8, 10:3, 11:6, 11:7)

water	1/2 cup
sugar	2 pounds
rose water	1/4 cup

Simmer 2 pounds of sugar with 1/2 cup water. Before removing the pot from the fire, add 1/4 cup rose water. The syrup may be diluted with water, or chilled with ice. Honey may be used instead of sugar.

Bitter hiera

by Ibn al-Tilmīd²¹ (§3:12)

white turpeth	10 <i>dirhams</i>
yellow myrobalan	
chebulic myrobalan	
anise	5 <i>dirhams</i>
Indian salt	2 <i>dirhams</i>
scammony (grilled in quinces)	2.5 <i>dirhams</i>
Nabataean celery water	

Pound and knead all the ingredients with Nabataean celery water. A potion comprises 2.5 *dirhams* of the mixture.

²⁰ Adapted from Ibn Sīnā's prescription in Nasrallah, p. 552.

²¹ Adapted from Kahl, *Ibn al-Tilmīd*, p. 195.

Bitter hiera

by Sābūr ibn Sahl²² (§3:12)

Greek mastic	
saffron	
Indian spikenard	
balm seeds	
asarabacca	
cassia	
cinnamon	1 <i>dirham</i> of each
Socotra aloe	15 <i>dirhams</i>
(balm twigs)	1 <i>dirham</i>

Pound and strain the ingredients, then store the mixture. Some physicians add the balm twigs. When a potion is needed, use 2 *dirhams* of the mixture, taken with honey.

Stomachic pill

by Ibn al-Tilmīd²³ (§3:12)

balm seeds	
balm twigs	
cassia	
Indian spikenard	
asarabacca	
cinnamon	
citronella root	
saffron	
mastic	
rootstock of sweet flag	
absinthe sap	
‘rolled’ birthwort	
Indian salt	1 <i>dirham</i> of each
Socotra aloe	15 <i>dirhams</i>
scammony	
agaric	
colocynth pulp	4 <i>dirhams</i> of each
celery water	

²² Adapted from Kahl, *Sābūr*, p. 72.

²³ Adapted from Kahl, *Ibn al-Tilmīd*, pp. 196-197.

Pound and strain the ingredients, then knead them with celery water. Form into small pills. A suitable portion comprises 2 *dirhams*, and is taken with hot water.

Drugs to stanch nosebleed

There are abundant varieties of drugs to stanch nosebleed (§7:16). Two examples below.

Snuff to stanch nosebleed by Ibn al-Tilmīd²⁴

burnt papyrus	
gum Senegal	
alum	
Egyptian opium	
date <i>ramik</i>	
camphor	5 <i>dirhams</i> of each
vitriol	
pomegranate flowers	
black bryony	
oak gall <i>ramik</i>	
burnt mussel shells	
burnt oak galls (slaked with wine vinegar)	
plantain	10 <i>dirhams</i> of each
salsify sap	
dragon's blood	
burnt wormwood	7 <i>dirhams</i> of each
dry burnt coriander	8 <i>dirhams</i>

Pound and knead the ingredients with plantain water, and form into pastilles. When needed, use two *daniqs* with plantain water.

²⁴ Adapted from Kahl, *Ibn al-Tilmīd*, pp. 302-303.

A drug for nosebleed by al-Kindī²⁵

wild ginger	
hematite	2 parts of each
sempervivum	
ben nut	powdered
myrrh	
wine vinegar (or vinegar only)	
cobweb	
Chinese ink or fragrant aloeswood	

Mix wild ginger and hematite with finely powdered sempervivum and ben nut. Add some myrrh and wine vinegar, alternatively wine vinegar only. Add cobweb into the mixture. The inside of the nose is rubbed with Chinese ink or fragrant aloeswood. [The mixture is then put inside the nose.]

Enema

by Qusṭā ibn Lūqā²⁶ (§3:12)

“One takes:

salix water	
purslane water	
waybread water	
knot-grass water	of each, a quarter of a <i>raṭl</i>
water of unhulled rice	half a <i>raṭl</i>

This is brought together, mixed with two *dirhams* of Armenian earth and the yolk of a fried egg, and used as treatment.”

²⁵ Adapted from al-Kindī, *Aqrābādīn*, p. 216.

²⁶ Adapted from Qusṭā ibn Lūqā, *Al-Adwiya al-mushila*, p. 94.

Index of some medical terms

This index is for central technical terminology. Specific terms for drugs are presented in the index of *materia medica*. This index follows the Latin alphabet.

Arabic transliterated	Arabic	English
<i>a</i>		
<i>āfa</i>	آفة	ailment
<i>al-aḥda ‘ān</i>	الأخدعان	occipital arteries; the lateral parts of the neck
<i>aḥšā’</i>	أحشاء	viscera
<i>aḡfār</i>	أجفار	eyelids
<i>al-akḥal</i>	الأكحل	median cubital vein
<i>am ‘ā’</i>	أمعاء	intestines, guts
<i>ašfār</i>	أشفار	palpebral margin
<i>‘a</i>		
<i>‘āda</i>	عادة	custom, habit
<i>‘aḍw</i>	عضو	body part; organ
<i>‘araq</i>	عرق	sweat
<i>‘ašāwa</i>	عشاوة	nyctalopia
<i>‘aṣab</i>	عصب	nerve
<i>b</i>		
<i>bāb</i>	باب	porta
<i>bāb al-kabid</i>	باب الكبد	portal vein
<i>badan</i>	بدن	body
<i>bāh</i>	باه	sexual potency
<i>balḡam</i>	بلغم	phlegm
<i>al-bāsīlīq</i>	الباسليق	basilic vein, vena basilica
<i>bāsūr</i>	باسور	haemorrhoid
<i>baṭr</i>	بثر	pustule

<i>bawwāb</i>	بواب	pylorus
<i>bawl</i>	بول	urine
<i>balādat al-dīhn</i>	بلادة الذهن	apathy
<i>buhḥat al-ṣawṭ</i>	يحة الصوت	hoarseness of voice
<i>buhār</i>	بخار	vapour
<i>d</i>		
<i>dā' al-fīl</i>	داء الفيل	elephantiasis
<i>dam</i>	دم	blood
<i>damawī</i>	دموي	sanguine
<i>dam'a</i>	دمعة	rhyas
<i>dalīl</i>	دليل	indication
<i>al-dawālī</i>	الدوالي	varicose veins
<i>dawā'</i>	دواء	drug
<i>dimāg</i>	دماغ	brain
<i>dummal</i>	دمل	boil
<i>duwwār</i>	دوار	vertigo
<i>ḍ</i>		
<i>ḍabūliyya</i>	ذبولية	marasmus
<i>ḍāt al-ḡanab</i>	ذات الجنب	pleurisy
<i>ḍirā'</i>	ذراع	forearm
<i>ḍ</i>		
<i>ḍarba</i>	ضربة	blow
<i>ḍarabān</i>	ضريان	throbbing pain
<i>ḍu'f</i>	ضعف	weakness
<i>f</i>		
<i>faṣd</i>	فصد	phlebotomy
<i>famm al-ma'ida</i>	فم المعدة	mouth of the belly
<i>fatq</i>	فتق	rupture

<i>fawadān</i>	فودان	agitation
<i>fi`l</i>	فعل	activity; effect
<i>futū`</i>	فتوء	protrusion
<i>ğ</i>		
<i>ğabha</i>	جبهة	forehead
<i>ğadb</i>	جذب	drawing
<i>ğild</i>	جلد	skin
<i>ğimā`</i>	جماع	coitus, sexual intercourse
<i>ğudām</i>	جذام	leprosy
<i>ğ</i>		
<i>ğašy</i>	غشي	unconsciousness
<i>ğatayān</i>	غثيان	nausea
<i>ğatīt</i>	غطيط	snoring
<i>ğidā`</i>	غذاء	nutriment
<i>ğišā`</i>	غشاء	membrane
<i>ğudda</i>	غدة	gland
<i>h</i>		
<i>hađm</i>	هضم	digestion
<i>halāk</i>	هلاك	death, annihilation
<i>huzāl</i>	هزال	emaciation
<i>ħ</i>		
<i>al-ħār al-ğarīzī</i>	الحار الغريزي	innate heat
<i>ħabl al-đirā`</i>	حبل الذراع	vena cephalica pollicis
<i>ħadbat al-kabid</i>	حدبة الكبد	convex side of the liver
<i>ħarāra</i>	حرارة	heat
<i>ħayđ</i>	حيض	menstruation, menses
<i>ħazāz</i>	حزاز	dandruff
<i>ħiğāb</i>	حجاب	diaphragm

<i>ḥiġāma</i>	حجامة	cupping
<i>ḥikka</i>	حكة	itching
<i>ḥummā</i>	حمى	fever
<i>ḥumra</i>	حمرة	redness
<i>ḥ</i>		
<i>ḥadar</i>	خدر	numbness
<i>ḥāṣṣiyya</i>	خاصية	peculiar virtue
<i>ḥawānīq</i>	خوانيق	diphtheria
<i>ḥayfa</i>	خيفة	fear
<i>ḥilṭ, aḥlāṭ</i>	خلط ج. أخلاط	humour, pl. humours
<i>i</i>		
<i>al-ibṭī</i>	الإبطي	axillary vein
<i>ifsād</i>	إفساد	spoilage
<i>iḥrāġ</i>	إخراج	extraction
<i>iḥtilāf al-dam</i>	اختلاف الدم	bloody diarrhoea
<i>iḥtibās al-ḥayḍ</i>	احتباس الحيض	amenorrhoea
<i>iḥtilām</i>	احتلام	nocturnal emission
<i>iḥtirāq al-dam</i>	احتراق الدم	combustion of blood
<i>iḥtiqān al-dam</i>	احتقان الدم	congestion of blood
<i>iltihāb</i>	التهاب	inflammation
<i>i'tiqāl</i>	اعتقال	detention
<i>imāla</i>	إمالة	deflection
<i>imtilā'</i>	امتلاء	plethos, overfilling
<i>imtilā' bi-ḥasab al-aw'iyya</i>	امتلاء بحسب الأوعية	plethos due to vessels; overfilling relating to vessels
<i>imtilā' bi-ḥasab al-quwwa</i>	امتلاء بحسب القوة	dynamic plethos; overfilling affecting the strength
<i>infiġār al-dam</i>	انفجار الدم	phleborrhagia
<i>intišār</i>	انتشار	<i>Liderweiterung</i>
<i>ishāl</i>	إسهال	diarrhoea

<i>istifrāġ</i>	استفراغ	evacuation
<i>istirḥa'</i>	استرخاء	feebleness
<i>i</i>		
<i>'ilāġ</i>	علاج	treatment
<i>'illa</i>	علة	illness
<i>'irq</i>	عرق	vein, vessel
<i>'irq al-ġabha</i>	عرق الجبهة	frontal vein
<i>'irq dārib</i>	عرق ضارب	pulsatile vein
<i>'irq ġayr dārib</i>	عرق غير ضارب	non-pulsatile vein
<i>'irq al-nasā</i>	عرق النسا	sciatic vein; sciatica; vena saphena externa
<i>k</i>		
<i>ka'b</i>	كعب	malleolus
<i>kabid</i>	كبد	liver
<i>kadar al-ḥawāss</i>	كدر الحواس	cloudiness of sensations
<i>kāhil</i>	كاهل	interscapular region
<i>kalaf</i>	كلف	freckles
<i>kammiyya</i>	كمية	quantity
<i>kasal</i>	كسل	laziness
<i>kaṭrat al-dam</i>	كثرة الدم	multitude of blood
<i>kayfiyya</i>	كيفية	method
<i>l</i>		
<i>labba</i>	لبة	jugular fossa
<i>lahā</i>	لهاء	uvula
<i>liṭa</i>	لثة	gums
<i>luzūm</i>	لزوم	adhesion
<i>m</i>		
<i>ma'biḍ al-rukba</i>	مأبض الركبة	popliteal fossa
<i>mādda</i>	مادة	matter, substance

<i>maḥṣil</i>	مفصل	joint
<i>ma'ida</i>	معدة	stomach
<i>mālinḥūniyyā</i>	مالتخونيا	melancholy
<i>manḥa'a</i>	منفعة	benefit
<i>manḥar</i>	منخر	nostril
<i>maq'ada</i>	مقعدة	anus
<i>ma'q</i>	مأق	canthus
<i>marad</i>	مرض	illness, disease
<i>maṭāna</i>	مثانة	bladder
<i>mawḍi'</i>	موضع	site, spot
<i>mīrfaq</i>	مرفق	elbow
<i>mīrra</i>	مرّة	bile
<i>mī'sam</i>	معصم	wrist
<i>mizāğ</i>	مزاج	disposition
<i>n</i>		
<i>nabḍ</i>	نبض	pulse
<i>naft al-dam</i>	نفث الدم	haemoptysis
<i>al-naḥīla</i>	النخيلة	callous hardenings of the face
<i>naḥs</i>	نخس	pricking pain
<i>naqras</i>	نقرس	gout
<i>nāsūr</i>	ناسور	polyp
<i>natn</i>	نتن	bad smell
<i>nawba</i>	نوبة	paroxysm, crisis
<i>nazf</i>	نزف	haemorrhage
<i>nazla</i>	نزلة	catarrh
<i>nuqra</i>	نقرة	the hollow of the neck
<i>nuzūl al-mā'</i>	نزول الماء	defluxion; cataract
<i>q</i>		
<i>qay'</i>	قيء	vomiting

<i>al-qayfāl</i>	القيفال	cephalic vein
<i>qalb</i>	قلب	heart
<i>qarḥ</i>	قرح	ulcer
<i>qawlanġ</i>	قولنج	colic
<i>qulā‘</i>	قلاع	aphthae
<i>quwwa</i>	قوة	strength; faculty
<i>r</i>		
<i>rabw</i>	ربو	asthma
<i>raḥim</i>	رحم	uterus
<i>ramad</i>	رمد	ophthalmia
<i>ra’s</i>	رأس	head
<i>ri’a</i>	رئة	lung(s)
<i>rīḥ al-sabal</i>	ريح السبل	wind of pannus
<i>ru‘āf</i>	رعاف	epistaxis; nosebleed
<i>s</i>		
<i>sabab</i>	سبب	cause
<i>sa‘fa</i>	سعفة	cradle cap
<i>sahar</i>	سهر	insomnia
<i>sakta</i>	سكتة	apoplexy
<i>saqta</i>	سقطعة	fall
<i>sawrat al-dam</i>	سورة الدم	vehemence of blood
<i>su‘āl</i>	سعال	cough
<i>sulāq</i>	سلاق	ptilosis
<i>sulliyya</i>	سلية	phthisis
<i>š</i>		
<i>šabakat al-dimāġ</i>	شبكة الدماغ	arachnoid mater
<i>šaḳīqa</i>	شقيقة	migraine
<i>šarsūf, šarāsīf</i>	شراسوف ج. شراسيف	false rib, pl. false ribs
<i>šarṭ</i>	شرط	scarification

<i>šawša</i>	شوصة	pleuritis
<i>šayhūha</i>	شيخوخة	old age
<i>širsām</i>	شرسام	phrenitis
<i>širyān</i>	شريان	artery
<i>šuqāq</i>	شقاق	fissures
<i>š</i>		
<i>al-šāfin</i>	الصفان	saphenous vein
<i>šadr</i>	صدر	chest
<i>šanf</i>	صنف	sort, species, kind
<i>šimāḥ</i>	صماخ	auditory meatus
<i>šulb</i>	صلب	spinal column
<i>šur´</i>	صرع	epilepsy
<i>t</i>		
<i>tabtīr</i>	تبثير	vesication
<i>tadbīr</i>	تدبير	regimen
<i>tahlīl</i>	تحليل	dissolution
<i>tamaddud</i>	تمدد	expansion, tension
<i>tamaṭṭā</i>	تمطى	stretching
<i>tarqawa</i>	ترقوة	clavicle
<i>tasāwin</i>	تساوٍ	balance
<i>tatā`ub</i>	تثاؤب	yawning
<i>taṭniyya</i>	تثنية	epaphairesis
<i>ṭ</i>		
<i>ṭiqal</i>	ثقل	heaviness
<i>ṭurab</i>	ثرب	omentum
<i>ṭ</i>		
<i>ṭab´</i>	طبع	natural disposition
<i>ṭabī´a</i>	طبيعة	nature, natural disposition

<i>ṭabaqa</i>	طبقة	tunic
<i>ṭamt</i>	طمث	menstruation, menses
<i>ṭihāl</i>	طحال	spleen
<i>u</i>		
<i>al-unṭayān</i>	الأنثيان	testicles
<i>al-usaylim</i>	الأسيلم	vena salvatella
<i>w</i>		
<i>wadağ</i>	ودج	jugular vein
<i>wağā‘</i>	وجع	pain
<i>wağh</i>	وجه	face; kind
<i>warak</i>	ورك	hip
<i>waram, awrām</i>	ورم ج. أورام	swelling, pl. swellings
<i>z</i>		
<i>zand</i>	زند	antebrachium
<i>ziyāda</i>	زيادة	excess
<i>zukām</i>	زكام	rheum

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