

QUSṬĀ IBN LUQĀ'S
MEDICAL REGIME FOR THE
PILGRIMS TO MECCA

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QUSṬĀ IBN LŪQĀ'S
MEDICAL REGIME FOR THE
PILGRIMS TO MECCA
The Risāla fī tadbīr safar al-ḥajj

EDITED WITH TRANSLATION
AND COMMENTARY

BY

GERRIT BOS



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FOREWORD

The present study is an enlarged and revised version of my dissertation completed in the year 1989 at the Vrije Universiteit in Amsterdam. Most of the corrections made are the results of advice and suggestions from colleagues and friends. Amongst them I thank the Professors H.J. Daiber, M. Ullmann, R. Kruk, S.R. Slings, M. Stol, and Dr. W. Raven. I am especially grateful to the Netherlands Organisation for Scientific Research for its generous financial aid without which this publication would not have been possible.

CONTENTS

I. Introduction	1
1. Biography	1
2. Literary activity	2
3. Manuscripts of the <i>Risāla</i>	3
4. Literary genre to which the <i>Risāla</i> belongs	5
5. Survey and evaluation of the content of the <i>Risāla</i>	6
II. Arabic text and translation	13
III. Commentary	85
Index of terms	159
a. Arabic	159
b. English	165
Index of names	170
a. Arabic	170
b. English	170
Glossary of <i>materia medica</i>	172
Bibliography and abbreviations	179

I. INTRODUCTION

The object of the present study, Qusṭā Ibn Lūqā's *Risāla ilā al-Ḥasan b. Maḥlad fī-tadbīr safar al-ḥajj*, is a unique text, not only because it is the only known health guide for the pilgrim to Mecca, but also because it is an eloquent testimony of the author's profound theoretical knowledge and practical skills. This theoretical knowledge is apparent from his familiarity with the works of ancient physicians such as Hippocrates and Galen, but above all with those of the Byzantine compiler Paul of Aegina, his major source. His practical skills are obvious from the composition of this treatise, which is a successful attempt to compose a concise, well-organized health guide for those pilgrims to Mecca lacking the physician's medical knowledge. The treatise contains basic information about the best regimen to preserve one's health and about potential major diseases as well as their treatment.

Sofar none of Qusṭā's medical works has been the object of systematic scientific research which tried to establish the measure of originality and dependence on earlier sources. Thus the following remark by Sezgin¹ is still relevant: "Über seine zahlreichen, uns erhaltenen medizinischen Schriften liegt uns bis jetzt keine Untersuchung vor. Die modernen Medizinhistoriker nehmen entweder keine Stellung zu seiner medizinischen Leistungen oder wiederholen das Lob arabischer Quellen."

The objective of the present edition and translation of Qusṭā's *Risāla fī tadbīr safar al-ḥajj*, which includes an extensive commentary on sources used and identical literature, is to initiate a critical evaluation of Qusṭā's achievements in the field of medicine.

1. Biography

Qusṭā Ibn Lūqā al-Baʿlabakkī (around 205/820 – 300/912), a doctor from Baalbek (Heliopolis), was a famous Christian scholar and translator. It is most likely that as a young man Qusṭā undertook a journey to the Byzantine Empire and returned to Syria with a collection of Greek books which he later either translated himself or which

¹ F. Sezgin, *Geschichte des arabischen Schrifttums* III, Leiden 1970, p. 270.

were translated by others. Summoned to Baghdad, Qusṭā was active under Caliph al-Mustaʿīn (862–866), preparing new translations of Greek scientific works into Arabic, or revising old ones. It was in this city that Qusṭā probably got acquainted with the famous philosopher al-Kindī, the translator Ḥunayn Ibn Ishāq and Thābit Ibn Qurra, author of various scientific works. Between 860 and 870, at the invitation of the ruler Sancherib, Qusṭā moved to Armenia where he would stay for the remainder of his life, composing several works for different patrons.

These² few scarce facts derived from Arabic biographical literature are all that is known about Qusṭā's life.

2. Literary activity

Though skilled in a variety of sciences³, Qusṭā was a prolific author, especially in the field of medicine⁴. His biographers list over sixty publications to his name, and some seventeen translations besides. Ibn an-Nadīm⁵ states that Qusṭā deserves to be ranked higher than Ḥunayn Ibn Ishāq because of his superior medical knowledge. Some of his medical works⁶ have been edited in the last decennia.

² See for Qusṭā's biographical data: E. Ruth Harvey, "Qusṭā Ibn Lūqā Al-Baʿlabakkī," in: *Dictionary of Scientific Biography* 11, New York 1974, pp. 244–246; H. Daiber, *Aetius Arabus, Die Vorsokratiker in arabischer Überlieferung*, Wiesbaden 1980, p. 3 ff.; M. Pelster, *Die Abhandlung des Qusṭā Ibn Lūqā über die Länge und Kürze des Lebens und die Physiognomie der Langlebigen*, Mainz 1985, pp. 15–19; J. Wilcox, *The Transmission and Influence of Qusṭā Ibn Lūqā's "On the Difference between Spirit and Soul"* (Diss.), New York 1985; J. Wilcox, "Our Continuing Discovery of the Greek Science of the Arabs: The Example of Qusṭā Ibn Lūqā," in: *Annals of Scholarship* 4/3 (1987), pp. 57–74.

³ For a detailed survey of what is known about Qusṭā's works see: G. Gabrieli, "Nota biobibliographica su Qusta Ibn Luqa," in: *Rendiconti della Accademia dei Lincei, Classe di scienze morali, storiche e filologiche*, 5th ser., vol. 21 (1912), pp. 341–382.

⁴ See M. Ullmann, *Die Medizin im Islam*, Leiden-Köln 1970, pp. 126–128, 190, 244; Sezgin, *GAS* III, pp. 270–274.

⁵ *Kitāb al-Fihrist*, ed. G. Flügel, Leipzig 1871-2, vol. I, p. 295; Transl. Bayard-Dodge, New York 1970, vol. II, p. 694.

⁶ See Pelster, *Abhandlung*; G. Haydar, *Kitāb fī al-bāh wa mā yuḥtāju ilayhi min tadbīr al-badan fī istiʿmālihi* (*Das Buch über die Kohabitation und die für ihre Ausübung notwendigen körperlichen Voraussetzungen*), Diss. Erlangen-Nürnberg 1973; N.A. Barhoum, *Das Buch über die Geschlechtlichkeit (Kitāb fī al-bāh)*, Diss. Erlangen-Nürnberg 1974; H. Fähndrich, *Abhandlung über die Ansteckung*, Stuttgart 1987.

3. *Manuscripts of the Risāla*

The following manuscripts⁷ have been used for the text edition of the *Risāla*:

1. MS British Museum⁸, Add. 7527 Rich, fols. 171 – 186, bearing the title: *Risāla ilā al-Ḥasan b. Maḥlad fī tadbīr safar al-ḥajj*. For its description see Cat. p. 204; it was copied in 1097/1686 by Muḥammad Shafi^c al-Kirmānī. The text, unvocalised, but with diacritical points, has been provided in some places with notes⁹ in Persian, mostly explaining the *materia medica*. The text, which serves as the basis of the text edition, is indicated by the sign A.

2. MS Daiber¹⁰ collection no. 46, fols. 169v – 175v, bearing the title: *Kitāb li-Abī Muḥammad al-Ḥasan b. Maḥlad fī mā ‘amaluhu fī tadbīr badanihi fī safarihi ilā al-ḥajj*. This MS has been described by Daiber; it was copied 12 Jumādā II 1302 by Muḥammad b. al-Ḥasan b. ‘Alī Naqī al-Ḥasanī al-Ḥurāsānī. The text is completely unvocalised, but has diacritical points; from fol. 170v it was written by a different hand and becomes hard to read. In my text edition it is indicated by the sign B.

3. MS India Office¹¹ no. 2821, fols. 94 – 112. Quṣṭā’s text, bearing the same title as MS Daiber, is part of the *Kitāb amān al-aḥṭār* by Abū al-Qāsim ‘Alī b. Mūsā b. Ja‘far b. Ṭāwūs. Though neatly written, as stated by Loth in his description of the MS, it abounds with scribal errors (see critical apparatus). In the text edition it is indicated with the sign C.

Besides the above mentioned MSS, Quṣṭā’s text has been

⁷ Sezgin, *GAS* III, p. 271 mentions three more MSS:

a. Haydarabad, Asaf., *ṭibb* 201;

b. Aleppo, al-Jarrāh (see Sbath, *Fihris* I, 59, no. 471);

c. Meshed, Riḍā II, 315, Mōṣul (see D. Çelebi, p. 122, no. 23).

Unfortunately I could not obtain a copy of these MSS.

⁸ See *Catalogus Codicum Manuscriptorum Orientalium qui in Museo Britannico asseruantur*, Pars secunda, Codices Arabicos amplexens (by W. Cureton and C. Rieu), London 1852, p. 204, no. 424.

⁹ I am grateful to Dr. J.J. Witkam for his help in the interpretation of these notes.

¹⁰ See H. Daiber, *Catalogue of the Arabic Manuscripts in the Daiber Collection*, Institute of Oriental Culture, University of Tokyo 1988, pp. 39 – 41; the date mentioned by Daiber (p. 39), namely, 28 Rajab 1301, is not correct for this treatise. Though the date of the year is hard to read, it seems to be 1302.

¹¹ See O. Loth, *A Catalogue of the Arabic MSS in the Library of the India Office*, p. 86, no. 2821.

edited¹² as part of the *Kitāb amān al-aḥṭār* of Abū al-Qāsim ‘Alī b. Mūsā b. Ja‘far b. Ṭawūs in Najaf 1951; this edition is not only uncritical, but also replete with printing errors (see critical apparatus). In the text edition it is indicated with the sign D.

These four witnesses to Qusṭā’s *Risāla* belong to two different families:

1. MS A
2. MSS B, C, and edition D

The critical apparatus showing many examples of MS A preserving a version different from MSS B, C, and edition D, substantiates this supposition.

MS A as the basis for the present text edition was chosen for the following reasons:

1. It contains a better version in the following cases:

	MS A	MSS B, C	edition D
ll. 20,32,46,59	باه	مياه	باه
l. 112	مائلة	ماهى	ماهى
l. 124	بالنوم		
l. 152	انعاش	B i.m. انعاش، انفاش C انفاش	ابعاس
l. 170	آفات	في اوقات	في اوقات
l. 190	عمقها	عنقها	عمقها
l. 251	متخذة	متصلة	متخذة
l. 467	منافس	C منافع B i.m. منافذ ، منافع	منافع

2. At times it shows the longer, more correct variant; see, for instance, ll. 57, 89, 418.

The ascription of the *Risāla fī tadbīr safar al-ḥajj* to Qusṭā is supported by the following indications consisting of terminological and ideological counterparts:

1. Both Qusṭā’s *Risāla* and his *Maqāla*¹³ *fī ṭul al-‘umr wa qīṣarihi* mention the following elements as causing diseases:

- a. *al-ta‘ab al-kaṭīr*¹⁴
- b. *al-ḥaraka al-mufriṭa*¹⁵

¹² I would like to thank Prof. E. Kohlberg for drawing my attention to this edition, which is not mentioned by Sezgin, *GAS* III, p. 271.

¹³ Ed. and transl. by M. Pelster; see note 2.

¹⁴ *Risāla* l. 126; *Maqāla* p. 36, l. 4.

¹⁵ *Risāla* l. 189; *Maqāla* p. 36, l. 4.

2. Both Qusṭā's *Risāla* and his *Kitāb*¹⁶ *fī al-i'ḍā'* refer to the following possible causes of diseases:

a. *al-hawā' al-muḥīṭ*¹⁷

b. *al-i'ḍā'*¹⁸

3. Both Qusṭā's *Risāla* and his *Kitāb*¹⁹ *fī al-bāh* make similar statements²⁰ concerning the permissibility of sexual intercourse during a journey.

4. Both Qusṭā's *Risāla* and his *Kitāb*²¹ *fī al-balḡam* mention a similar treatment²² for the extraction of the *dracunculus medinensis*.

4. *Literary genre to which the Risāla belongs*

Qusṭā's *Risāla* belongs to the literary genre of health guides for the traveller. The theme of the preservation of one's health during a journey appears for the first time in a systematic discourse by Dioscorides of Carystus²³ (fl. circa 360 B.C.). This short discussion, however, survived only in a citation by Oribasius²⁴. Oribasius in his turn was faithfully copied by Paul of Aegina²⁵. According to Ibn an-Nadīm²⁶ Rufus of Ephesus was the author of a *Kitāb fī tadbīr al-musāfir, maqāla*. This text, which is lost, is cited by Ibn al-Mubārak²⁷. Several Arab authors²⁸ treated this theme as well; some treated it, just like their Byzantine predecessors, as part of their medical encyclopedias; see aṭ-Ṭabarī²⁹, ar-Rāzī³⁰, Pseudo Thābit Ibn Qurra³¹, and Ibn Sīnā³². Others, as Qusṭā, devoted a

¹⁶ Ed. and transl. by H. Fähdrieh; see note 6.

¹⁷ *Risāla* 1. 193; commentary note 88; *Kitāb* 36, 37.

¹⁸ *Risāla* 11. 493–494, commentary note 404; *Kitāb* 3.

¹⁹ Ed. and transl. by G. Haydar; see note 6.

²⁰ *Risāla* 11. 59–59, commentary note 20; *Kitāb* p. 28.

²¹ This text of Qusṭā is still in MS; see Sezgin *GAS* III, p. 272, note 17.

²² *Risāla* 1. 480; *K. al-balḡam* as cited by ar-Rāzī XI, p. 294. See also commentary note 392.

²³ See Wellmann, *Fragments*, 142.

²⁴ See *Synopsis* V, 31.

²⁵ See Bk. I, ch. 55.

²⁶ See Ibn an-Nadīm, ed. Flügel, vol. I, p. 291; Transl. Bayard-Dodge, vol. II, p. 687.

²⁷ See his *Kitāb al-munqid min al-halaka fī daf' maḍārr as-samā'im al-muhlika* (MS Chester Beatty 3795, fol. 120 (arab. 113) a 1ff; cf. Wellmann, *Geschichte*, p. 5; Ullmann, *Rufus*, pp. 37–40.

²⁸ See Sezgin, *GAS* III, p. 483 *tadbīr al-musāfir*, and Ullmann, *Medicine*, p. 99.

²⁹ See pp. 109–111.

³⁰ See XVIII 1, pp. 209–224.

³¹ See pp. 349–351.

³² See I, pp. 92–94.

monograph to the subject; cf. Ibn al-Jazzār³³, Ibn Mandawayh³⁴, and Ibn al-Ḥaṭīb³⁵.

5. Survey and evaluation of the contents of the *Risāla*

Introduction

Addressing al-Ḥasan b. Maḥlad Qusṭā states that, because of personal circumstances, he is unable to accompany him on his pilgrimage to Mecca. For this reason Qusṭā decided to compose a treatise containing the necessary information for the preservation of Ḥasan's health during his pilgrimage. Qusṭā then gives a survey of the topics which such a treatise should contain. For this purpose Qusṭā makes a distinction between a traveller's health guide in general and that of the *ḥājj* in particular. A general traveller's health guide should deal with the following topics:

1. Rest, food, drink, sleep.
2. Fatigue and its cure.
3. Diseases caused by the different winds and their cures.
4. The prophylaxis against vermin and the treatment of diseases caused by them.

A traveller's health guide for the *ḥājj*, however, should discuss four additional topics:

5. Water and its improvement.
6. Means to quench one's thirst.
7. Prophylaxis against the *dracunculus medinensis*.
8. Prophylaxis against snakes and treatment of injuries caused by them.

Qusṭā arranged these eight topics into the fourteen chapters that form the contents of the treatise.

Qusṭā's selection of subjects is based partly on theoretical knowledge about the contents of a traveller's health guide in general, and, partly on practical knowledge, about the specific diseases

³³ See his *Zād al-musāfir wa qūt al-ḥādīr* (Sezgin, *GAS* III, p. 305); For a different opinion about the genre of this work, see Ullmann, *Rufus*, p. 38.

³⁴ According to Ibn Abī Uṣaibi'a, p. 460 he composed a *Risāla fī tadbīr al-musāfir* (cf. Sezgin, *GAS* III, p. 329).

³⁵ See his book on hygiene, entitled *Kitāb al-wuṣūl li-ḥifẓ aṣ-ṣiḥḥa fī al-fuṣūl*; in the last *qā'ida* of the second part he discusses the regimen of the traveller (Ullmann, *Medizin*, p. 192). Unfortunately I could not obtain a copy of its edition by María de la Concepción Vázquez de Benito, Salamanca 1984.

and dangers awaiting the pilgrim to Mecca in particular. The combination and application of these two kinds of knowledge have resulted in a lucid and systematic exposition of the subject matter in this treatise.

Chapter 1

In this chapter Qusṭā gives an exposition of the best times to travel and of the regimen of the traveller in regard to food, drink, rest, sleep, and cohabitation. The chapter offers a fine example of how Qusṭā succeeded in translating his theoretical knowledge, based on ancient sources, into practical advice for the traveller. An example of the application of theoretical knowledge is his advice concerning:

1. When to eat during the journey.
2. The different kinds of food to be eaten, for instance, meal of barley, meat of one year old kids and lambs, or chickens and francolins.
3. When to indulge in sexual intercourse.
4. The anointment of the body with different kinds of oil.

Chapter 2

In this chapter Qusṭā discusses the different kinds of fatigue which may befall the traveller during a journey and possible cures. Again it offers a fine example of Qusṭā's application of theoretical knowledge, based on ancient sources, to the regimen of the traveller. When discussing the different kinds of fatigue Qusṭā explicitly mentions Galen as his source, and when discussing the different cures, namely, massage and bathing, Qusṭā joins a long tradition of authors referring to similar treatments.

Chapter 3

The subject matter of this chapter is an extensive discussion of the different kinds of massage and their application. As stated above in the description of the previous chapter, Qusṭā joined a long tradition of authors (starting with Hippocrates) in dealing with this subject. However, Qusṭā's exposition is less theoretical and more practical than that of the other authors. The application of massage is central in Qusṭā's treatise: what parts of the hand the masseur should use,

how much pressure he should apply and which parts of the body should be treated.

Chapter 4

In this chapter Qusṭā deals with the detrimental effect on the constitution caused by extremely cold (northerly) winds and extremely warm (southerly) winds, which cause several diseases, such as rheum, defluations, cough, earache and eye ache. This subject was also treated extensively by Hippocrates, Galen, and the Byzantine compilers. Thus once again Qusṭā forms part of a long tradition. His discussion of the north (cold) winds, only mentioning the detrimental effect, is similar to that of Hippocrates. The discussion about these winds by other Arab authors such as aṭ-Ṭabarī, Pseudo Thābit Ibn Qurra and Ibn Sīnā, referring also to their wholesome effect, is similar to that of Galen. In this discussion Galen's commentary on Hippocrates' Περί ἀέρων ὑδάτων τόπων is of central significance. In his recommendation of warm remedies for diseases originating from cold winds and cold remedies for diseases originating from warm winds, Qusṭā acts in conformity with the generally accepted principle of *contraria contrariis*.

Chapter 5

In this chapter Qusṭā discusses the following kinds of earache:

1. Earache caused by cold, its indications and treatment.
2. Earache caused by heat, its indications and treatment.
3. Earache caused by wind locked in the ear, its indications and treatment.

The indications mentioned by Qusṭā for the different kinds of earache are similar to those mentioned by Paul of Aegina. Aṭ-Ṭabarī, Pseudo Thābit Ibn Qurra, ar-Rāzī and Ibn Sīnā do not mention these indications in their discussions of earache. The remedies mentioned by Qusṭā for the different kinds of earache are sometimes similar to those mentioned by the Byzantine compilers Alexander of Tralles and Aetius of Amida, and always similar to those mentioned by Paul of Aegina. There is also a close similarity between Qusṭā and Paul of Aegina in the use of terminology and the structure of the chapter. Because of the similarity in indications, remedies, terminology and structure of the chapter one can reasona-

bly assume that Qusṭā, while composing his chapter on earache, borrowed heavily from Paul of Aegina.

Chapter 6

The subject matter central to this chapter concerns the diseases caused by changes of weather, namely, rheum, defluction and cough, and the treatment thereof. The definitions given by Qusṭā to these diseases show a close similarity to those of Paul of Aegina. The same is true for the remedies, especially the dressings called *barbaros*, *athena* and *hikesios*. Aṭ-Ṭabarī, Pseudo Thābit Ibn Qurra, ar-Rāzī and Ibn Sīnā do not mention these dressings in their discussion of the treatment of these diseases. Neither are they mentioned in the lists of dressings composed by al-Majūsī and Ibn Sīnā. Again, as in the case of earache, the structure of this chapter is similar to the structure of that composed by Paul of Aegina. Therefore, the conclusion that Qusṭā was deeply influenced by Paul of Aegina in the composition of this chapter seems inevitable.

Chapter 7

In this chapter Qusṭā discusses the effect of dust on the human eye. The wholesome effect on the human eye, when it concerns pure unadulterated dust is mentioned first. Followed by the harmful effect, when the eyes are already infected. Qusṭā's implicit acknowledgement of dust as a major cause of eye diseases under the pilgrims in Mecca is confirmed by modern medical research conducted among pilgrims in Jiddah. The collyria and liniments mentioned by Qusṭā as remedies have many counterparts in ancient and Arabic ophthalmological literature.

Chapter 8

In this chapter Qusṭā suggests the criteria for determining the quality of different waters. By then Hippocrates had already discussed these criteria in his treatise *Περὶ ἀέρων ὑδάτων τόπων*. This treatise was to play a central role in later discussions on this subject in Byzantine and Arabic medical literature. Only twice is there a modification of his views; these modifications, originating with Galen, are:

1. Galen's definition of the best water in general; a definition borrowed and expanded upon by Paul of Aegina.

2. Galen's statement that waters mixed with certain minerals have not only a negative but also a positive effect on the constitution in the case of certain diseases; a similar statement is made by aṭ-Ṭabarī, ar-Rāzī and Ibn Sīnā.

Qusṭā's definition of the best water is similar to that of Galen and of Paul of Aegina; Qusṭā's opinion about waters mixed with certain minerals is the same as that of Hippocrates, who only refers to their detrimental effect.

Chapter 9

This chapter concentrates on different means to improve the quality of contaminated water. How bad the quality of water was in those days can be derived from the fact that this subject occupies a central place in the traveller's health guides of ar-Rāzī and Ibn Sīnā. Patah's description of the inferior water in Jiddah also shows that this situation has not improved much since. The means discussed by Qusṭā to improve the quality of contaminated water are similar to those recommended by Oribasius and Paul of Aegina. From this fact one can draw the conclusion that Qusṭā derived his knowledge from these sources. Since Paul of Aegina is Qusṭā's main source of information in several other chapters as well (5, 6, 11, 12, 14), it is highly probable that the same holds good for this chapter.

Chapter 10

In this chapter Qusṭā first of all gives a description of various causes of thirst, and then proceeds to recommend different means of quenching one's thirst during the absence of water. Galen too had already given an exposition of the causes of thirst, followed by the Byzantine compilers Oribasius, Alexander of Tralles and Paul of Aegina. Qusṭā's description resembles that of Oribasius and Paul of Aegina. Galen also discussed several means to quench one's thirst, as did the Byzantine compilers Oribasius, Aetius of Amida, Alexander of Tralles and Paul of Aegina. Qusṭā's recommendations are similar to those of his Byzantine predecessors; his terminology, however, is closest to that of Paul of Aegina. From this I infer that Paul of Aegina was Qusṭā's major source for the composition of this chapter.

Chapter 11

In this chapter Qusṭā discusses the prophylaxis against vermin in general. Byzantine compilers such as Oribasius and Paul of Aegina, were the first to treat this subject coherently. How all kinds of vermin can be a serious problem for the pilgrim, even in modern times, is made clear by Patah's description of the plague of flies, mosquitoes and bugs in Jiddah. Qusṭā mentions different preventive means, such as fumigants or salves, but also gives concrete recommendations, for instance, concerning sleeping quarters. While these preventive means mentioned by Qusṭā are similar to those mentioned by Paul of Aegina, this similarity becomes all the more striking when one compares the recommendations given by both authors concerning sleeping quarters, the kindling of a fire and the avoidance of certain trees. When one also considers the fact that the structure of Qusṭā's chapter is the same as that of Paul of Aegina and that he employs a similar terminology, it will be clear that Qusṭā obtained his information from Paul's treatise. This treatise of Paul was known to the Arab doctors of Qusṭā's era and consulted by them, suggested by the fact that it is cited by ar-Rāzī, who lived one generation after Qusṭā.

Chapter 12

In this chapter Qusṭā gives a description of the treatment of stings or bites caused by vermin. As in the preceding chapter dealing with the prophylaxis against vermin, this chapter, dealing with the injuries caused by vermin, too shows a close similarity between Paul of Aegina and Qusṭā with regard to prescriptions, terminology and structure of the whole chapter. Therefore the conclusion must equally be that Qusṭā drew his material from Paul's treatise on poisons.

Chapter 13

This chapter deals with the "spontaneous generation" of the *dracunculus medinensis* and the different means preventing its birth. In this context Qusṭā devotes some attention to the story of "spontaneous generation" in general. This scientific theory, expounded by Aristotle in his zoological works, remained popular until the nineteenth century. As a translator of Aristotle, Qusṭā may well have drawn the information about this theory from the original. A

linguistic comparison shows that he did not make use of the Arabic translation of Aristotle's zoological works, which is traditionally ascribed to Yaḥyā Ibn al-Biṭrīq. As for Qusṭā's preventive treatment of the *dracunculus medinensis*, I could find neither source nor exact counterparts. This is not so strange considering that many preventive remedies existed for this disease, a common one in the Arabian peninsula in ancient as well as recent times.

Chapter 14

In this chapter Qusṭā discusses the treatment of the *dracunculus medinensis* after it has made its appearance. The advice Qusṭā gives about the extraction and the treatment of the wound are the same as in Paul of Aegina's chapter on the treatment of the *dracunculus*. A remarkable example of this similarity is when both quote Soranus and Leonidas about the nature of the *dracunculus* and its treatment. This quotation is not known from any other source. The many similarities in this chapter between Qusṭā and Paul, make it obvious that Qusṭā derived this information from Paul's treatise. Ar-Rāzī's many quotations from Paul's treatise on the *dracunculus* indicate that this text was known to Arab physicians, and consulted by them in Qusṭā's era.

II. TEXT AND TRANSLATION

The following sigla and abbreviations are used:

A	= MS British Museum, Add. 7527/2 Rich.
B	= MS Daiber collection no. 46
C	= MS India Office no. 2821
D	= Ed. Najaf 1951
+	= added by
–	= omitted by
del.	= deletit
i. l.	= intra lineas
i. m.	= in margine
inv.	= invertit
s. l.	= sub linea / supra lineam
*	= conieci vel correxi
< >	= to be added
[]	= to be omitted

رسالة قسطا بن لوقا الى الحسن بن مخلد في تدبير سفر الحج

بسم الله الرحمن الرحيم وبه ثقتي . التاهّب اعزّك الله لما لا يؤمن حلوله والاستعداد لكلّ ما تحتاج اليه من قبل وقت الحاجة اليه من الحزم وقوة الفكر وصحة التمييز . وقد اعتزمت اعزّك الله من هذا السفر على ما اسأل الله ان يعظم بركته عليك وان يرزقك فيه السلامة ومحمود العاقبة ويجزل لك الثواب عليه ويحسن صحابتك فيه . فحتاج اعزّك الله الى الاستظهار باتّخاذ ما يحتاج اليه مثلك من آلة العلاج ، ان كان مسيرك في بلد لا يحضره طبيب ولا يوجد فيه كلّ ما تحتاج اليه من الادوية . وباللّٰه يمينا يعلم صدقي فيها لولا صبية اعزاء لا يمكن التغرّب عنهم وملامتي بحضرة هذا السيد اعني ابا الحسن عبيد الله بن يحيى مولى امير المؤمنين ، وعلمي ايّك الله انه سيخرج معك اطباء يفوز بجميع ما تحتاج اليه من مثله ، لآثرت الخروج معك على اي الاحوال كان ، والقيام بخدمتك والسعي في حوائجك وامورك ، بما يظهر به ما يكتنه ضميري وتحتوي عليه النية مني . واذا لم اجد لي الى ذلك سبيلا رايت ان اكتب ما تحتاج اليه من ذلك في كتاب ينوب عن حضوري بعض النيابة ،

١ بسم الله الرحمن الرحيم B + رسالة : كتاب B,C,D بن لوقا : اليوناني B,C,D + الى الحسن : لابي محمد الحسن B,C,D في تدبير سفر الحج : فيما عمله في تدبير بدنه في سفره الى الحج B,C,D ٢ بسم ثقتي : قال B,C,D التاهّب : الراهب D حلوله : دخوله B,C ٣ وقت : C i.m. ٤ الفكر : التفكير B,C التمييز : التمييز A ، التشمير B,C,D الله : تعالى ذكره B,D + ، تعالى عن ذكره C + ٥ بركته عليك : B,C,D inv. عاقبة : عافية C,D ٦ صحابتك فيه : فيه صحبتك B ، فيه صحابتك C استظهار : اظهار B,C باتّخاذ : بكلّ B,C,D ٧ مثلك : -C ، في مثلك D مثلك من آلة : في مثل آلة B العلاج : الاروية C ان كان ... من الادوية -C ٨ يمينا : عزّ وجلّ C + يعلم : -C ، عزّ وجلّ D + صبية : لي B,C + ٩ اعزاء اعاز A ، بعضهم اعزاء C ، بعضهم اعلاء D وملامتي... المؤمنين B,C,D - ١٠ وعلمي : واعلم B,C,D ايّك الله : -B,C انه : انك D ١١ اطباء : من الاطباء B,C,D من يفوز : يفى B,C,D مثله : مثلهم A لآثرت : لايرد C ١٢ كان : ذلك B,C,D + بخدمتك : من خدمتك A وامورك : -B,C,D ما يكتنه ... منى : سيرى في طاعتك B,C,D ١٣ اذ : -B,C,D لي : -B,C ١٤ اكتب : ابين B ، اثبت C,D ما : جميع ما B,C,D

The treatise of Qusṭā Ibn Lūqā to al-Ḥasan b. Maḥlad¹ on the regimen during the pilgrimage to Mecca.

In the name of God, the Merciful, the Compassionate, in Whom I trust. To prepare yourself—may God strengthen you—for any eventuality and to provide yourself with everything you may need in case of emergency is a sign of resolution, thinking power and healthy judgement. Since you are determined—may God strengthen
 5 you—to take upon yourself this journey, I will ask God to bestow on you great blessings, safety, a happy end, a reward and good company during it. You will need—may God give you strength—information about the means of treatment someone in your position should possess, that is if your journey will take place in a country where there is no doctor nor any required drug. I swear by God, Who knows my sincerity, that but for my dear young children who cannot be left alone and the fact that I would be blamed in the
 10 presence of this lord, I mean Abū al-Ḥasan ‘Ubayd Allāh b. Yaḥyā², servant of the Commander of the Faithful, (if I left him), and (but for) the fact that I know that a doctor able to obtain whatever necessary, will accompany you—may God strengthen you—I should have preferred to depart with you whatever the circumstances, to serve you, to fulfil your needs and to show you my secret feelings and intentions.³ Since I do not have that possibility I decided to write down all you need to know in a treatise, which to
 15 a certain extent will replace me. I beg God to give you, in the good

- ١٥ والى الله ارغب في ايناس الخاصّ والعامّ من اوليائك واصحابك باوبتك سالما معافى، انه على كل شيء قدير. في وصف التدبير الذي يحتاج ان يستعمل في الاسفار بالجملة وما يحتاج البدن اليه [منها] في هذا السفر خاصّة. الاشياء التي تحتاج الى علمها من امر تدبير الابدان في الاسفار بالجملة هي اربع معان : الاول منها العلم بالتدبير في وقت الراحة والطعام والشراب والنوم والباه ، والثاني العلم باصناف الاعياء والشيء الذي يذهب بكل صنف منه والثالث العلم بالعلل التي تعرض من هبوب الرياح المختلفة وعلاجها، والرابع العلم بالتحرزّ من الهوامّ وعلاج آفاتهما اذا وقعت. فهذه الاشياء التي تحتاج الى علمها والعمل بها في الاسفار كلّها. فاما سفر الحجّ فمع الحاجة فيه الى هذه المعاني قد تخصّصه اربع معان آخر : الاول منها العلم باختلاف المياه واصلاح الفاسد منها، والثاني الاحتياال في عدم الماء وقتله وما يقطع العطش ، والثالث العلم بالتحرزّ من الاشياء التي يتولّد منها العرق المدني وهيجان البواسير ، والرابع التحرزّ من الحيات والعلاج من

١٥ ايناس : استئناس B ، اساس C ١٦ معافى : معافا C,D ، معافى s.l. C انه : فانه C على كل شيء قدير : جواد حكيم قادر B,C,D في : لي C التدبير : التدابير B,C,D الذي : التي B,C يحتاج : يحتاج B,C ان يستعمل : الى استعمالها B,C,D ١٧ في الاسفار ... بجملة ١٨ : في تدبير الابدان B ، في الاسفار من تدبير الابدان C,D ١٩ هي : وهي B,C,D معان : معاني A الاول : المعنى الاول C,D الراحة : السير ووقت الراحة B,C,D ٢٠ والباه : والمياه B,C العلم : في العلم B,C,D الاعياء : الغمز C ، - B ، الاعيان D والشيء : والاشياء B,C,D الذي يذهب : التي تذهب B,C,D ٢١ المختلفة : - C ٢٢ التحرزّ : التحراز B آفاتهما : اوقاتهما B,C ٢٣ الى علمها والعمل : ان تعلم وتعمل B,C,D كلّها : - B,C,D ٢٤ اربع معان : اربع معاني A ، اربعة معان B ٢٥ عدم : عوز B,C,D ٢٦ وما : بما B,C,D العلم : - C التي : - B

company of all your friends and companions, a safe and healthy return. Verily, God is omnipotent. I will now give you a description of the regimen which must be applied during journeys⁴ in general and of the needs of the body during this journey⁵ in particular. What one must know about the regimen of the body during journeys in general can be classified according to four points:

1. Knowledge of the regimen in regard to resting, eating, drinking,
20 sleeping and sexual intercourse.
2. Knowledge of the different kinds of fatigue and their cure.
3. Knowledge of the diseases which are caused by the blowing of the different winds and their treatment.
4. Knowledge of the prophylaxis against vermin and of the treatment of the injuries caused by them.

These are the things of which practical knowledge is necessary during journeys in general. The pilgrimage to Mecca, however, is, apart from the four points mentioned, distinguished, by four other points:

- 25 1. Knowledge of the different waters and of the improvement (of the quality) of contaminated water.
2. (Knowledge of) the expedients with which one can quench one's thirst in the case of lack or paucity of water.
3. Knowledge of the prophylaxis against the matter from which the *dracunculus medinensis* and hemorrhoids⁶ arise.
4. (Knowledge of) the prophylaxis against snakes and of the treatment of the injuries caused by them.

- من آفاتهما. وانا واصف كلّ ما يحتاج اليه من العلم بهذه المعاني على ما
 قال الاوائل في ذلك ومصنّفه بابا بابا ليظهر معانيه وليسهل استخراج
 ٣٠. ايّ معنى الشمس منها وعلى الله اتوكّل في ذلك وبه استعين. الباب الاول
 كيف ينبغي ان يكون التدبير في نفس المسير واوقات الطعام والشراب والنوم
 والباه. الباب الثاني في الاعياء وعما يحدث وكم انواعه وبأي شيء يعالج كل
 شيء منه. الباب الثالث في اصناف التغميز وذلك اسفل القدم ، في ايّ حال
 يحتاج الى كلّ صنف من اصناف التغميز وفي ايّها يحتاج الى ذلك القدم.
 ٣٥ الباب الرابع في العلل التي تتولّد من هبوب الرياح المختلفة الهواء. الباب
 الخامس في وجع الاذن الذي يعرض كثيرا من هبوب الرياح الشديدة الحرّ
 والبرد وعلاج ذلك. الباب السادس في الزكام والنوازل والسعال الذي يعرض
 من اختلاف الهواء وعلاج ذلك. الباب السابع في علل العين التي تعرض
 من اختلاف الهواء والغبار والرياح وعلاج ذلك. الباب الثامن في امتحان
 ٤٠ المياه المختلفة ليعلم ايّها اصلح. الباب التاسع في اصلاح المياه الفاسدة.
 الباب العاشر في عدم الماء والاحتياال لما يقطع العطش. الباب الحادي عشر

٢٩ قال : قالت A,D بابا بابا : على ما قاله الاوائل B,C + ، على ما
 قالت الاوائل D + ٣٠ معنى : - B الشمس : السن C على الله : تعالى ذكره B,D + ،
 تعالى عن ذكره C + اتوكّل : توكل A ، توكلنا B,C,D في ذلك : - B استعين :
 نستعين B,C,D ٣١ المسير : السير B,C,D ٣٢ الباه : المياه B,C في :
 ما D يعالج : يتعالج B,C ٣٣ شيء : نوع A i.m. كلّ شيء : من كلّ نوع
 منه B,C,D تغميز : غمز B,C,D وذلك : وذلك A,C وذلك اسفل القدم : - B في ايّ
 حال : وفي ايّ الاحوال B,D ، وفي ايّ الامور C ٣٤ كلّ : - B,C,D صنف من
 اصناف التغميز : صنف من الاصناف منه B,D ، صنف منه C ذلك القدم : ذلك
 القدم A ٣٥ الهواء : وتغيير الهواء B,C,D ٣٦ الرياح : المختلفة D +
 ٣٧ الباب السادس ... وعلاج ذلك : الباب السادس في الزكام والنوازل
 والسعال وما شابه ذلك من الاشياء التي تعرض من اختلاف الهواء وعلاج
 ذلك C,D i.m. والسعال ... وعلاج ذلك : - B ٣٨ علل : وجع B ٣٩ والرياح :
 وغير ذلك D + وعلاج : وغير B,C ذلك : والسعال وما يشابه ذلك من الاشياء التي
 تعرض من اختلاف الهواء وعلاج ذلك B + ٤٠ ايّها اصلح : اصلحها B,D الفاصدة :
 - B ٤١ في عدم الماء والاحتياال لما : في الاحتياال في عوز المياه وقّلتها بما
 A i.m. احتياال : من تحيلة B,C,D

I will describe every detail which one must know of these questions and I will arrange it in chapters. In this way I hope to clarify everything and to simplify the derivation of any point requested. To
30 achieve this I will put my trust in God and ask His help.

Chapter 1: How the regimen should be in regard to the journey itself, the times of eating, drinking, sleeping and sexual intercourse.

Chapter 2: On fatigue, its origin, different kinds and treatment.

Chapter 3: On the different sorts of massage and rubbing of the sole of the foot; under which circumstances each kind is needed and when massage of the feet has to be applied.

35 Chapter 4: On the diseases arising from the blowing of the different (kinds of) winds.

Chapter 5: On earache, which often arises from the blowing of very warm or cold winds, and its treatment.

Chapter 6: On rheum, defluations and cough, which are caused by a change of weather, and their treatment.

Chapter 7: On eye diseases which are caused by a change of weather, by dust or winds, and their treatment.

Chapter 8: On the examination of the different waters in order to
40 find out which one is best.

Chapter 9: On the improvement of contaminated water.

Chapter 10: On the lack of water and the ingenuity in finding means of quenching one's thirst.

باب ٤٥ في التحرّز من جميع الهوامّ. الباب الثاني عشر في علاج لسع الهوامّ كلّها. الباب الثالث عشر في البيان عما إذا تولّد العرق المدني وبماذا يتحرّز من تولّده. الباب الرابع عشر في وصف علاج العرق المدني إذا تولّد في البدن. الباب الأوّل كيف ينبغي ان يكون التدبير في السير نفسه واوقات الطعام والشراب والنوم والباه. ينبغي ان يكون السير في الاوقات التي يكون منها الهواء في احمد احواله، اعني ان يكون قريبا من الاعتدال وان يكون بريثا من الحرّ المفرط والبرد المفرط وان يشدّ الحقوين والصدر والصلب بعمائم ليّنة شداً معتدلاً يمنع البدن من الاهتزاز في اوقات الحركة الدائمة وان يتوقّى تناول الغذاء في اوائل المسير او في وسطه. بل يكون التدبير في المسير والغذاء والراحة والباه على ما اصف. ينبغي ان يكون السير اذا كان البدن مستريحاً والمعدة نقيّة من الطعام وخروج فضل الغذاء من البطن والامعاء. وليتوقّ المسافر ان لا يكون اكله في المسير، فان اتّصل وطال صيرّ ما يغتذي به في السفر سويق السلت او كعكا وسكرا يشربه بماء بارد او شراب الخوخ او شراب الاجاص او جلاب وسكنجيين مجمعين، بعد ان يكون السكنجيين اقلّ

٤٢ جميع : كلّ B,C,D علاج لسع : علاج عامّ في لسع B,C,D كلّها : جميعا B,C,D ٤٣ في البيان : - B,C,D ٤٤ وصف : صفة B,C,D تولّد : تولّدت B ٤٥ كيف : في كيف B تدبير : تدابير B ٤٦ والباه : والمياه B,C ٤٧ منها : - B,C,D في : - B,C ، على D قريبا : قرية B,C,D ٥٠ المسير : السير B,C,D التدبير : السير A ٥١ الباه : المياه B,C ٥٢ الطعام : بعد الاستظهار بالتماس لين الطبيعة A + ٥٣ والامعاء : ثمّ يسار الى المنزل B,C,D + ولتوقّ : ويتوخّى B,C,D المسافر : - B,C,D ان لا يكون اكله في المسير : ألا يذري من الغذاء في المسير شيئا A ٥٥ سفر : سير B,C,D او كعكا ... بماء بارد - B,C,D ٥٦ الاجاص : او شراب ورد B,C,D + مجمعين : مجمعون C السكنجيين اقلّ : السكر النقل B,C,D

Chapter 11: On the prophylaxis against all (kinds of) vermin.

Chapter 12: On the treatment of stings and bites of all (kinds) of vermin.

Chapter 13: On the explanation of the origin of the *dracunculus medinensis* and on the prophylaxis against its occurrence.

Chapter 14: On [the description of] the treatment of the *dracunculus medinensis* once it has appeared in the body.

45

Chapter 1: How the regimen⁷ should be in regard to the journey itself, the times of eating, drinking, sleeping and sexual intercourse. The journey should take place in those times⁸ (of the day) when the weather is most pleasant, I mean that it should be close to temperateness and free of excessive heat and cold. The traveller should bind⁹ soft turbans around his waist, chest and back, tight enough to prevent the body from being shaken during constant movement. He should take care not to eat in the beginning or middle part of the journey. His regimen in regard to travelling, food, rest and sexual intercourse should be as I will describe. The journey should take place when the body is at rest, when the stomach¹⁰ is free of food and when the excrements have left the body and intestines. The traveller should take care not to eat anything during the journey. If, however, the journey continues for a long time, he should feed himself with meal¹¹ of the parched grain of barley¹² or biscuits¹³ and sugar¹⁴, and drink cold water or syrup¹⁵ of peaches¹⁶ or syrup of prunes¹⁷ or rose-water¹⁸ syrup and oxymel¹⁹ together, since oxymel (alone) is not sufficient during the time of travelling and movement.

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في اوقات المسير والحركة، او اكل لوز مقشّر من قشرته مع سكر. فاذا نزل المنزل بادر بالراحة والنوم مدّة يسيرة، فان احتاج الى استعمال الباه كان استعماله ذلك بعد الراحة اليسيرة من تعب حركة المسير. ٦٠
ثمّ يستعمل صبّ الماء الفاتر على بدنه ومرخه بلادهان المعتدلة المزاج المقويّة للاعضاء والمصلّبة لها، كدهن الورد ودهن الآس والادهان المعمولة بالاافويه العطرية. ثمّ يدلك ويصبّ على البدن ماء فاتر او معتدل البرودة ليصلب البدن ويشدّ ما قد تخلخل منه بحركة المسير. ثمّ يغتذي بعد ذلك بالغذاء الذي قد احكمت صنعته وعنصره ووفق من كمّيته على انه يكفي الى ان يبلغ المنزل الآخر ان كان السير متّصلاً. واصلح ما ٦٥
يغتذي به ما يولد اخلاطاً معتدلة سليمة من الاستحالة الى الاخلاط الرديئة والفساد في المعدة مثل لحوم الجدايا والحملان الحولية والفرايج والدراريح، اذا كانت صنعتها سليمة من الفلفل والكرويا والخولنجان والدار صيني وسائر الابازير الحارّة. فان اقتصر في صنعتها على الشواء والكردناج

٥٧ او اكل لوز : ولوز B,C,D من قشرته : يؤخذ B,C,D+ سكر : ووجدت في بعض نسخ هذا الكتاب زيادة في هذا الموضع منه وهو : او يسير من بزماورد متّخذ من فروج او محمّر جدي او كردناج من الفرايج باليسير من الخبز A + ٥٨ بادر : بودر B، بودر C احتاج : احتجت B,C,D ٥٩ باه : مياه B,C استعماله : استعمال B,C,D المسير : السير B ٦٠ بالادهان : بالبدان C، بالادهان C i.m. المعتدلة : المعدلة D المزاج : B,C,D- ٦١ المقويّة : القوة المقويّة B,C,D والمصلّبة : الصلبة C الآس : الابتر؟ A ٦٢ الافاوية : الاقاوية D ثمّ يدلك : البدن بعد ذلك المروخ بنخالة قد رشّ عليها نضوح مبرّد او ماء ورد B,C,D+ على البدن : يعقب ذلك B,C,D فاتر او معتدل البرودة : فاتر الى البرد B,C، فاتر ماييل الى البرد D ٦٣ ليصلب : ما هو يصلب B,C، بما هو ليصلب D ويشدّ : ويشدّد B,C,D تخلخل : تحلل B,C المسير : السير B-C,D ٦٤ الذي ... يغتذي به (٦٦) : B,C,D- ٦٦ ما يولد : بما يولد A سليمة ... صنعتها (٦٨) : C- الى الاخلاط ... معدة (٦٧) B,D-، الجدايا B,D-، الحولية : الحلوية B والفرايج والدراريح B,D- ٦٧ كانت : كان B صنعتها : خلقتها D سليمة : وليكثر D+ ٦٩ فان اقتصر ... صالحا (٧٠) : B,C,D-

He can also eat peeled almonds²⁰ with sugar*. As soon as he has alighted he should hasten to rest and sleep for a little while. If he wants to have sexual intercourse²¹, he can do so after he has recovered a little bit from the fatigue caused by [the movement of] the
60 journey. Thereupon he should pour lukewarm water over his body and anoint it with oils²⁴ balanced in temperament which strengthen and harden the limbs, such as oil²⁵ of roses, oil²⁶ of myrtle and oils prepared with fragrant spices. After the anointment* he should pour³⁰ water that is lukewarm or balanced in coldness over his body in order to harden it and to strengthen what has been shaken by the movement of the journey. Then he has to feed himself with substan-
65 tial, well-prepared food, enough to reach the next stop when the journey is long. The best food is that which produces balanced³¹ humours which do not change into bad humours and corruption in the stomach, such as meat of one year old kids³² and lambs, of chickens and francolins³³, if prepared without pepper³⁴, caraway³⁵, galangale³⁶, cinnamon³⁷ and other hot spices. If he confines himself during the preparation to roasted or parboiled³⁸ meat he is doing

٧٠. كان صالحاً. فان وجد البيض فمخّه نيمبرشت كان من احمد ما يتغذى به وبعد الاغتذاء ينبغي ان يستعمل النوم والراحة الى وقت الحركة للمسير الثاني. فإنّ مَنْ تدبّر بهذا التدبير يسلم من ان تحتدّ في بدنه الاخلاط او يعرض له اعياء او غيره من الآفات التي تتولّد عن الحركة والسير الشديد المتّصل. الباب الثاني في الاعياء وعمادها يحدث وكم انواعه وبأي شيء يعالج كلّ نوع منه. من اجل انه لا يؤمن ان يتولّد عن الحركة المفرطة اعياء ما يجب ان نصف الاعياء وانواعه وبأي شيء ينبغي ان يحتال لاصلاحه والسلامة منه. فنقول ان الاعياء هو حال يحدث للبدن حسّ الم يتولّد عن حركة مفرطة، وذلك ان حركات البدن جميعاً إنّما تكون بالعضل والعصب المنبثّ فيه الذي منشؤه واصله الدماغ. فاذا تحرّك البدن حركة مفرطة نال العضل المحرّك له اذى بالاحتكاك والتصادم الذي يكون بالحركة السريعة، والحال الحادثة عن ذلك تسمّى اعياء. وانواع الاعياء التي ذكرها جالينوس اربعة، فالاول منها يسمّى المثلث والثاني يسمّى الممدّد والثالث

٧٠. فمخّه B,C,D- : كان A- : ٧١. ينبغي ان B,C,D- : ٧٢. يسلم : سلم B,C,D تحتدّ : يجد B,C,D الاخلاط : الاختلاط B,C, الاخلاط C i.m. ٧٣. له : لها B غيره : غيرها B تتولّد ... المتّصل (٧٤) : يجلبها المسير ان شاء الله تعالى B,C,D ٧٤. في الاعياء : بالاعياء B ، ما الاعياء C,D ٧٦. لاصلاحه : في اصلاحه B,C,D ٧٨. حركات : الحركات B,C البدن : للبدن B ، C- ٧٩. المنبثّ فيه : المنبثّ فيها A ، B,C,D- منشؤه : منشأوه A ، متساوية C الدماغ : النجاج C ، النخاع D ، ككتاب معّ الرأس A i.m. ٨٠. التصادم : التصادم A ، فيه D+ ٨١. والحال : فالحالة B انواع : B- التي : الذي B ذكرها : ذكره B ٨٢. يسمّى : B,C,D-

70 well. One of the best things to feed himself with is the yolk of a poached³⁹ egg. When he has eaten he must sleep and rest until it is time for [the movement of] the second part of the journey. If he keeps this regimen the humours of his body will not become sharp and no fatigue or other diseases will befall him, which originate from the intense movement during a long journey.

Chapter 2: On fatigue⁴⁰, how it is caused, how many kinds there are
75 of it, and how each kind may be cured. Since there is a chance that some sort of fatigue will originate from excessive movement, I must give a description of its different kinds and of the means to be used in order to safeguard against it or to heal it. Fatigue is a state which causes the body to feel pain arising from excessive movement. All bodily movements are caused by muscles and nerves, spread over the body. Their origin is the brain. If the body makes excessive movements, the muscles which move the body suffer damage
80 through the friction and collision caused by quick movement. The state which results from this is called fatigue. The different kinds of fatigue⁴¹ which Galen has mentioned are four (in number): The first one is called the “burdening”, the second one the “tightening”, the third the “heating” and the fourth the “hurting.”

يسمى المسخن والرابع يسمى المؤلم. فالابدان الممتلئة اخلاطا لزجة غليظة مائلة الى البرودة والرطوبة، اذا تعبت بالحركة اذابت الحركة ٨٥ تلك الاخلاط وانضجتها فصارت دما رقيقا لطيفا تمتلئ به اوعية البدن فتزيد في دم البدن زيادة بيّنة. فان كانت قوّة البدن ضعيفة كانت تلك الزيادة كلّاً عليه. فاحسّ من ذلك بثقل اكثر ما يمكنه ان يحتمله وكان من ذلك الاعياء المثقل. وان كانت قوّة البدن قوية يفى بحمل الاخلاط إلّا ان الاوعية اعني العروق ضيقة لا تسع الاخلاط التي حللتها الحركة فكان من ذلك الاعياء الممدّد، فيحسّ الانسان كأن عروقه واعضائه تمدّ التمدّد الذي يناله بالزيادة التي كانت فيها بالاخلاط التي اذابتها الحركة وحللتها. فاما الذي يكون مع اسخان وحرارة والاعياء الذي يكون مع الم يحسّ في الاعضاء فإنهما يكونان في الابدان التي اخلاطها لطيفة دقيقة، فاذا تحرّكت هذه الابدان حركة كثيرة حميت الاخلاط التي فيها وسخنت بالحركة اذ كانت في طبيعتها مائلة ٩٥ الى الحرارة فكان منها الاعياء الذي قدّمنا ذكره في هذا الفصل.

٨٣ يسمى : B,C,D - ٨٤ برودة : B,C ٨٥ تمتلئ : B,C
 ٨٦ بيّنة : بلية C ٨٧ يحتمله : يحتملها A ٨٩ إلّا ان ...
 الاخلاط : B,C,D - ٩٠ حللتها : ذابتها C فكان : كان A,C,D
 من ذلك : ذلك C كأن : كلّ A ٩١ تمدّ : تمدّد D كانت :
 زادت B,C,D ٩٢ اذابتها : ذابتها C ٩٤ التي : تكون B +
 دقيقة : رقيقة C,D ٩٥ الاخلاط : كاخلاط C وسخنت : وسميت C
 ٩٦ الحرارة : الحركة B,C,D قدّمنا ... فصل : يكون من
 حرارة مع اسخان B,C,D

A body⁴² full of viscous, coarse humours tends towards coldness and moisture. When it becomes tired through movement, the movement makes the humours thin and boils them. As a result the humours change into fine blood filling the vessels of the body, and clearly increasing the amount of blood in the body. If, however, the power of the body is small, then this increase of blood burdens it. Because of that the body feels more burdened than it can actually endure and “burdening” fatigue results. When the power of the body is great, it is capable of carrying (the burden of) the humours. But when the vessels, I mean the veins, are narrow, they cannot contain the humours, which are dissolved by the movement, and “tightening” fatigue⁴³ results. In that case one has the feeling that one’s veins and limbs are extending as a result of the increase (of blood) from the humours, which by the movement got thin and dissolved. The kind of fatigue which occurs with heat⁴⁴, and warmth and the one which occurs with pain felt in the limbs, appear in the body whose humours are fine and thin. When this body makes many movements, its humours get warm because of their natural tendency towards heat. This results in the fatigue already mentioned in this chapter. If the humours are by nature warm, they get warmer be-

فاذا كانت الاخلاط في طبيعتها حارة ازدادت سخونة من قبل الحركة فكان من ذلك الاعياء المؤلم. وذلك ان الاخلاط تصير في هذه الحال بمنزلة الشيء الذي قد غلى واحترّ وصار يلذع ويؤلم. فهذه اسباب الاعياء الاربعة التي ذكرها جالينوس. فاما علاجها فإن النوع الاول والثاني منها يصلحان بالتغميز الرقيق والمروخات بالادهان المعتدلة، الحارة كدهن الخيريّ والسوسن ودهن الآس والادهان المتخذة بالزيت الذي قد طبخت فيه الافاويه الطيبة الرائحة الملطفة المحللة مثل [الزيت الذي قد طبخ فيه] القسط والاسطرك والميعة العطرية التي ليست حرارتها مفرطة. ويكون استعمال الغمز فيها بان يملأ الغامز كفه من لحم البدن ويشدّ عليه كفه شدّا متساويا، ولا يكون شدّه على ما يقع منه تحت ابهامه واطراف اصابعه اكثر من شدّه على سائر ما في كفه من اللحم. بل يكون كأنّه يضغظ شيئا قد ملأ كفه. كذلك في اوقات الدهن يجب ان يكون مسحه البدن بالراحة كلّها والاصابع مسحاً واحداً ولا ينال البدن من الابهام واطراف الاصابع اشدّ من المسح الذي يناله

٩٧ فاذا : فان B,C,D ازدادت : ان زادت C ٩٨ تصير : B -
 هذا الحال : هذه الحالة B ، ذلك الحال C ٩٩ الذي قد : A -
 غلى : غلا B,C,D احترّ : احتدّ C,D وصار : B,C,D - ١٠٢ الحارة :
 B - والسوسن : ودهن السوسن B,C,D بالزيت : C - ١٠٣ طبخت :
 مورده D + الافاويه : افاويه B,C ، افاوية D الطيبة الرائحة : طيبة
 الرائحة B,D ، طيب الرائحة C الملطفة المحللة : ملطفة محللة B,C,D
 الزيت : الزبيب B ، C - ١٠٤ القسط : B - والميعة العطرية : والميعة
 واطفار الطيب او *قصب الذريرة (ذريرة القصب B,C,D) وما شابه ذلك
 من الاشياء العطرية B,C,D ١٠٥ استعمال : D - غمز : تغميز B,C
 فيها : B,C,D - يملأ : علا C ١٠٦ لحم : الحمر A شدّا : شديداً A
 ولا : لا B,C,D ١٠٨ كذلك : وكذلك B,D ، ولذلك C في : B,C,D -
 ١٠٩ البدن : للبدن B,C,D من الابهام : B,C,D -

cause of the movement (of the body), and from this the “hurting” fatigue results. The humours in this case have the same effect as something which is boiling and therefore burning and hurting. These are the four causes of fatigue which Galen has mentioned.

- 100 One can recuperate from the first two kinds by much soft massage⁴⁵ and by anointment with oils balanced in heat, such as oil of gillyflower⁴⁶, of lily⁴⁷, and oil of myrtle⁴⁸, or by embrocation with salves prepared with olive oil in which spices have been cooked which are fragrant, softening and dissolving, such as olive oil in which has been cooked costus⁴⁹, solid storax⁵⁰ and fluid fragrant storax⁵¹, the heat of which should not be excessive. To apply massage⁵⁴ means that the masseur takes the flesh of the body into
- 105 his full hand and exerts an equal pressure upon it. The pressure of his thumb and fingertips must not exceed the pressure of the rest of the hand. But it must be as if he is pressing something which he holds in his full hand. The same holds good in the case of anointing the body; it should be done by the full hand and fingers equally; the
- 110 anointment of the body by thumb and fingertips must not exceed

من الكفّ ووسط الراحة. وايضا فان دخول الحمام والاستنقاع في الماء المعتدل الحرارة الذي حرارته الى الفتورة مائلة يذهب بهذا الجنس من الاعياء. فاما الاعياء الذي يسخن فيه البدن والاعياء الذي يكون منه في البدن شيء من حسّ الألم فإن حاجته الى الغمز يسيرة، بل ١١٥ إن لم يستعمل فيه الغمز البتّة كان ذلك اصلح. والذي ينبغي ان يقصد في تمرّيقه بدهن ورد مع ماء فاتر قد خلطا جميعا وضربا ضربا شديدا حتى يصيرا في <صهورة الزبد. وذلك يكون اذا اخذ من الماء الفاتر جزء ومن الدهن جزءان او ثلاثة، ثمّ ضربا في قارورة ضيّقة الفم حتى يختلط ويتمزج بهما. وكذلك يعمل بدهن الخيريّ ودهن البنفسج ١٢٠ ودهن النيلوفر ويمسح البدن بهذه الادهان مسحاً رقيقاً، ويستعمل القعود في الماء الفاتر الذي فتورته بمقدار فتورة اللبن الحليب في وقت حلبه. والذي ينبغي ان يستعمل في انواع الاعياء كلّها من الاغذية الغذاء المعتدل في جوهره وكيفيته، وان يحتمي من جميع الاشياء الظاهرة الحرارة التي تولد اخلاطاً رديئة حارّة، ويبادر بالنوم بعقب التعب

١١١ ووسط : وسط B,C,D استنقاع : استنقاع D في الماء : بالماء B ١١٢ مائلة : ماهي A,C,D فيه : منه C ١١٤ حسّ : جنس B,C,D غمز : عصير A ١١٦ تمرّيقه : تدبيره بمرخه B,C ، تدبيره تمرّيقه D ورد : قدد A خلطا : خلط C,D وضربا : B ، وضرب C,D ١١٧ يصيرا : يصير C,D <صهورة : حالة B,C ١١٨ الماء A i.m. ١١٩ يختلط : يختلطا A ، يخلط D يتمزج : يمتزج B بهما : بها C يعمل : يفعل B,C,D ١٢١ فتورته : فتور B,C ١٢٣ جوهره : وكمّيته B,C,D + يحتمي : تحمي D ١٢٤ يبادر : تبادر D بالنوم : - B,C,D تعب : اعياء B,C,D

that by the palm and middle of the hand. When one takes a bath in water, the heat of which is balanced and tending towards lukewarm, this kind of fatigue is abolished. In the case of fatigue which heats⁵⁵ the body or which gives it a feeling⁵⁶ of pain, the need for massage
115 is (only) small; it is even better not to apply massage at all. When one wants to anoint the body with oil of roses⁵⁷ and lukewarm water, these should be mixed and thoroughly beaten until it turns into a foamlike substance. This can be achieved by taking one part of lukewarm water and two or three parts of oil and by beating this in a flask with a narrow opening until it is well mixed. The same process must be followed with oil of gillyflower⁵⁸, oil of violets⁵⁹ or
120 oil of nenuphar⁶⁰. One should anoint one's body softly with these oils and sit in a bath⁶¹ (filled) with water which is as lukewarm as fresh milk at the moment of milking. As regards the food which one should take during the different kinds of fatigue, it is necessary to take those kinds of food which are balanced from their nature and quality. One should beware, however, of everything which is obviously hot and therefore produces bad, hot humours. One should
125 hasten to go to sleep after getting tired and beware of bodily exercise

١٢٥ وان يتوقّى الحركة بعد الطعام وفي الاوقات التي يحسّ فيها ان في
 المعدة طعاما وان يتوقّى شرب الماء البارد بعقب التعب الكثير. الباب
 الثالث في اصناف الغمز وذلك القدم وفي ايّ الاحوال يحتاج الى كلّ
 صنف من اصناف الغمز وفي ايّها يحتاج الى ذلك القدم. الغمز ثلاثة
 اصناف فمنه صنف يكون بذلك شديد مفرط الشدّة يصير به البدن الى
 ١٣٠ حال انتفاخ ولا تثبت فيه اصابع الغامز على موضع واحد من البدن،
 بل يجول على البدن صعدا وسفلا، وهذا الصنف من الغمز اسم الدلك
 به اولى من اسم الغمز. ومنه صنف يكون بضغط شديد وكبس على الاعضاء
 تلزم فيه الكفّ والاصابع موضعا واحدا من البدن على خلاف الصنف الاول .
 ومنه ما يكون ذلك برفق ولين لا شدّة معه ولا اتعاب للغامز. فالغمز الذي
 ١٣٥ يكون بالدلك الشديد يحتاج اليه اذا قد اجتمعت في البدن بخارات
 كثيرة متكاثفة قد تحيّرت في البدن وبقيت فيه، وحدوث هذه البخارات
 يكون إما عن راحة كثيرة وبطالة وغذاء كثير وإما عن تعفّن وحرارة غريبة
 خارجة عن الطبيعة، وذلك إنما يتهيأ عند تكاثف الجلد وتلبّده. ففي
 هذه الاحوال جميعا ينبغي ان يستعمل هذا النوع من الغمز، اعني
 ١٤٠ الذي يكون بذلك شديد ومسح بقوة صالحة وان يكون ذلك في الاعضاء

١٢٥ بعد الطعام :- C وفي : عقب C ، وفي C del. ، في B يحسّ :
 يظنّ B,C,D في : - D ، ب B,C ١٢٨ ذلك : ذلك A ١٢٩ مفرط :
 يفرط C ، الحرارة و B,C,D+ الشدّة : بحيث D+ ١٣٠ حال : حمرة
 وسخونة و B,C,D+ ١٣١ يجول : يجعل B,C,D اسم : باسم B ١٣٢
 به : - B اولى : اليق B,D ، ليؤمن C من : - C الغمز : التغميز B,C,D
 ١٣٣ موضعا واحدا : موضع واحد C ١٣٤ ذلك : فيه B,C,D+ ولين :
 وان C ١٣٥ اذا : كان B+ ، كانت C,D+ ١٣٦ تحيّرت : فجرت B ،
 تحدث D ١٣٧ تعفّن : تعص C ١٣٨ يتهيأ : تهيأ C ١٣٩
 غمز : تغميز B ١٤٠ شديد :- C بقوة - B وان : بعد ان C-A,D
 يكون :- C ذلك في الاعضاء : ذلك الاعضاء A

after a meal as long as one feels food in the stomach. One must also beware of drinking cold water after much strain.

*Chapter 3: On the different sorts of massage*⁶² and rubbing of the feet; in which circumstances what kind is needed and when foot massage has to be applied. There are three kinds of massage; one kind consists of an extremely hard rubbing which makes the body swell
130 up. The hands of the masseur should not stick to one place, but should move up and down over the whole body. For this kind of massage the term “rubbing”⁶³ is better fitting than that of “massage”. Another kind of massage consists of a hard pressing upon the limbs whereby the hands and fingers stick to one place as opposed to the first kind. The third kind consists of a gentle pressing, which
135 does not tire the masseur. The one consisting of hard rubbing is needed when the body is full of many thick vapours which have collected in the body and remain there. These vapours are caused either by much rest, idleness and food or by putrefaction and extraordinary, unnatural heat, which arises from a thick skin. In all these cases it is necessary to apply this kind of massage, I mean the
140 one that consists of hard rubbing with proper force. The limbs

التي تغمز متساويا ولا تكون اطراف الاصابع والابهام تعمل في ذلك اكثر مما تعمله الراحة وسائر الكف. فإن استعمل هذا الصنف من التغميز يخرج تلك البخارات المحترقة ويحللها عن البدن، فيحدث من ذلك للبدن راحة بيّنة. وهذه الحال من الغمز ينبغي ان تتوقّى وتجتنب فيمن قد تعب تعباً شديداً او استعمل رياضة مفرطة، وذلك ان مَنْ كانت هذه حاله يكون قد انحل عن بدنه بالتعب والحركة وسخف وتحلل منه ما لا يحتاج معه الى زيادة تحليل وتخلخل، بل هو الى تشديد بدنه وتصلبيه احوج. واما الغمز الذي يكون بشدّ اليد على الاعضاء شداً شديداً لا بالدلك الشديد فذلك يحتاج اليه في وقت الاعياء المتولّد عن التعب، وذلك ان هذا الغمز يشدّ البدن ويجمع بعضه الى بعض حتى يذهب عنه التخلخل والتسخّن الذي اكتسبه من التعب. فاما الغمز الذي يكون برفق ولين فيحتاج اليه في التدبير الذي يسمّى الانعاش، اعني به تدبير الناقه من مرض حارّ وفي ابدان المشائخ والصبيان وفي ابدان*المعمرّين لان ابدان هؤلاء جميعاً قد يحتاج فيها الى جذب الغذاء من داخل الاعضاء الى ظاهر البدن . فاما ذلك القدم فان منفعته في جذب شيء

١٤٢ مما : ما A سائر - : B ١٤٣ المحتقنة : المحتقنة C ١٤٤ تجتنب :
 تجتنب C ١٤٥ او استعمل : واستعمل A ١٤٦ وسخف :
 ويسخن B ، وانسحق C لا - : C ١٤٧ تخلخل : تحلل B,C
 ١٤٨ يكون بشدّ اليد : يشدّ به الغامز يده B,C,D الاعضاء : من
 غير ذلك فكذا يكون شدّ اليد على الاعضاء C + شداً شديداً :
 ممتداً B,C,D + ١٤٩ فذلك : وذلك B ١٥١ تخلخل : تحلل B,C
 تسخن : تسحق C تسخف D ١٥٢ الانعاش : الانعاش B ، الانعاش B i.m.
 الانفاس C ، الابعاس D ١٥٣ حارّ : حادّ C,D المعمرّين : المعمرّين
 A,B,D ، المحمدين C ١٥٤ قد - : B,C

should be pressed equally, whereby the fingertips and thumb are not more active than the palm and rest of the hand. By applying this kind of massage one causes those vapours originally locked in the body to depart from it and to dissolve. The result for the body is an obvious relief. One should beware of this kind of massage and avoid
145 it in the case of someone who has toiled very hard or done excessive physical exercises. For the body of someone for whom this is the case is emaciated and thin by hard labour and movement, whereby (the bad vapours) have dissolved. He therefore does not need more dissolution, but strengthening and hardening. The massage which does not consist of a hard rubbing but of a hard pressing of the hands upon the limbs is needed in the case of fatigue arising from hard
150 labour. For this kind of massage strengthens the body and makes it firm, so that the dissolution and heat resulting from hard labour disappear. The soft, gentle massage is needed in the case of the regimen which is called “convalescence”⁶⁴, I mean the regimen which cures the bodies of old men, boys and the long-lived from a hot disease. For the food in the body of all these people should be drawn from
155 inside the organs towards outside the body. The benefit of rubbing the feet is that it draws what has been collected in the stomach or in-

ان كان قد تحيّر في المعدة او في الامعاء، ولذلك ينبغي ان يستعمل عند الامتلاء من الطعام وعند اخذ الدواء الذي لا يؤمن ان يقيّاه شاربته وان يجتنب في الاوقات التي يحتاج فيها الى ان يلبث الدواء في المعدة والامعاء ولئلا ينحدر عنها فيطّل فعله. فاما الشدّ على القدم واستعمال احوال التغميز فيها — لا الدلك الشديد — فينتفع به ١٦٥ منفعة بيّنة فيمن قد مشى مشيا كثيرا او وقف وقوفا كثيرا. وذلك انه يفعل في القدم كفعل الغمز في سائر البدن لانه يجمع ويشدّ ويصلب العضل ويفشّ الفضل البخاري الحارّ الذي قد انصبّ اليها مع الدم بالمشي او بالوقوف الذي هو اكثر مما يمكنها ان تحتمله. ولذلك ينبغي ان يجتنب الدلك الشديد في جميع الاعضاء بعقب التعب، وان يستعمل فيها الغمز بالشدّ عليها وجمع الكفّ على الموضع الذي يحتوي عليه منه . فهذا ما يحتاج اليه من العلم بامر الغمز وما ينبغي ان يستعمل منه في الاسفار. الباب الرابع في العلل التي تتولّد من هبوب الرياح المختلفة المفرطة البرد او الحرارة او الغبار الكثير، وكيف ينبغي ان يحتال لاصلاحها. الرياح المفرطة في الحرّ والبرد قد يكون منها آفات ١٧٠

١٥٦ تحيّر : لجز D ولذلك : وذلك C ١٥٧ الامتلاء : امتلاء المعدة B,C,D يقيّاه : يقيّاه D ، يقيّاه B,C ١٥٨ يلبث : يلبث B,C,D ١٥٩ ولئلا : لئلا B,C,D ١٦٠ لا : لا C- ١٦١ وذلك : كثيرا B,C+ انه : ان C ١٦٢ يشدّ : يشدّد B ، C- ١٦٣ ويفشّ : ويفشّر A ، D- الفضل البخاري الحارّ : البخار الحادّ B,C ، البخاري الحارّ D انصبّ : انصبّت A ١٦٦ عليها : عليه B,C,D جمع : جميع B منه : وكذلك في القدم B,C,D+ ١٦٩ البرد او الحرارة : الحرّ والبرد B او الحرارة : والحرّ C ، او الحرّ D ١٧٠ لاصلاحها : لاصلاح D منها : - B,C,D آفات : في اوقات B,C,D

testines. Therefore it should be applied when the stomach is full of food and when one takes a drug of which there is a chance that one will throw up. It should be avoided, however, when the drug is supposed to stay in the stomach or intestines, so that it does not descend
160 from it and lose its effect. To press upon the feet and to apply the (different) kinds of massage, except for hard rubbing, is useful for someone who has been walking much or standing still frequently. For it has the same effect on the feet as massage on the rest of the body, because it contracts, strengthens and hardens the muscles and decreases the hot, vaporous residue which flowed with the blood to the feet as a consequence of excessive walking or standing still. It is
165 therefore necessary to avoid hard rubbing of all the limbs after hard labour, but one should apply massage, which consists of pressing with one's hand on the place caught hold of. These are the things one should know about massage and about its application on a journey.

Chapter 4: On the diseases originating from the blowing of the different winds⁶⁵ which are extremely cold or warm, or originating from
170 much dust⁶⁶; and on the drugs to be applied in order to cure them. The extremely warm or cold winds may cause much harm to the

تجني على البدن جنايات عظيمة. فمنها ما يولّد وجع الاذن وذلك يقع كثيرا ومنها ما يولّد زكاما ونوازل وسعالا ومنها ما يولّد اوجاعا في العين ولاسيما اذا كان مع الريح الشديد غبار وكان في العين علة ما متقدمة. والذي يتحرّز به من هذه الآفات جميعا ان يشدّ الرأس بعمامة شدا يشتمل على الاذنين والانف والفم ولا يزل في شدّه خللا يدخل بينه وبين الاذنين ١٧٥ ريح البتّة. وأن تسدّ الاذن إن كان فيها علة، وكانت في جوهرها ضعيفة، بقطنة قد بلّت ببعض الادهان. فإن كانت الريح حارة كان الدهن دهن الورد او دهن البنفسج وما اشبههما من الادهان. فان كانت باردة كان الدهن دهن السوسن او دهن الياسمين او دهن الناردین او ما اشبه ذلك. ١٨٠ فاما الزكام والنزلة فينبغي في اوقات هذه الرياح إن كانت باردة ان يستنشق رائحة الشونيز المقلو والكمّون والافاويه اليابسة الحارة مثل القرنفل والبسباسة والزعفران والورس والعود وما اشبه ذلك. وان كانت الرياح حارة استعمل الاشياء الباردة مثل الكافور والصندل والورد وما اشبه ذلك. فهذا ما يستظهر به في دفع آفات هذه العوارض أن لا تقع. فاما ما يتعالج به منها اذا وقعت فنستخير به فيما بعد ان شاء الله. الباب ١٨٥ الخامس في وجع الاذن الذي يعرض كثيرا من هبوب الرياح المختلفة وكيف

١٧١ تجني : يخشى B,C ما : هو B,D + ١٧٢ نوازل : نزلة C ١٧٣
 الشديد : الشديدة B غبار : غبارا B,C ١٧٤ من هذه الآفات : منه مدّة
 الآفات B ١٧٥ يزل : يترك B,C,D خللا : خلل B,C,D يدخل : B - الاذنين :
 الانان A، الدثار B,C,D ١٧٦ ريح B - تسدّ : يسدّ ؟ B، يشدّ A,C,D الاذن : الاذن A
 ١٧٨ الورد : سوسن C دهن بنفسج : ياسمين C، او بالحاردين (= ناردین)
 C +، اشبههما : اشبه ذلك C من الادهان : B,C,D - فان كانت ...
 ذلك (١٨٠) : C - كانت : الريح B + ١٨٠ النزلة : نزل A، B - ١٨١ ان :
 C - الشونيز : الشو C المقلو : المطق C ، المقلی D ١٨٣ استعمل :
 يستعمل B ١٨٤ ان لا : لا B,D ١٨٥ يتعالج : يعالج C نستخير :
 سنخبر D ١٨٦ وكيف ... الرياح ١٨٧ : C -

body, like the wind which frequently causes earache, the one which causes rheum⁶⁷, defluctions⁶⁸ or cough, and the one which causes eye ache, especially if a strong wind is accompanied by dust and the eye suffers from some previously incurred disease. One should protect oneself against all these kinds of harm by binding a turban⁶⁹ around the head, covering the ears, nose and mouth. And one should leave certainly no opening between one's head and ears prone to the wind. In the case of a disease⁷⁰ of the ears, which are by nature weak, one should plug them with a wad of cotton wool which has been moistened in some kind of oil. When the wind is warm one should use oil of roses⁷¹ or oil of violets⁷² or the like. When the wind is cold one should use oil of lilies⁷³ or oil of jasmine⁷⁴ or oil of nard⁷⁵ or the like. As for rheum⁷⁶ and defluction at the time of these cold winds, one should sniff the odour of parched nigella⁷⁷, cumin⁷⁸ and hot dry spices such as clove⁷⁹, mace⁸⁰, saffron⁸¹, mameceylon tinctorium⁸², aloeswood⁸³ and the like. If, however, the winds are warm, one should use cold remedies such as camphor⁸⁴, sandalwood⁸⁵, roses⁸⁶ and the like. This is what may be found helpful in warding off the harm of these diseases, so that they do not occur. More drugs that can be used as a cure in the case of these diseases will be mentioned later on, God willing.

Chapter 5: On earache⁸⁷ which occurs frequently as a result of the blowing of the different winds, and on the remedies to be applied in

ينبغي ان يحتال لاصلاحها. قد يعرض كثيرا من هبوب الرياح الحارّة او الباردة وجع الاذن، وقد يكون ذلك ايضا في الاسفار من غير هبوب رياح عند الحركة المفردة وحدة الاخلاط وحرارتها. فان عرض وجع الاذن من برودة كان دليله ان الوجع يكون في داخل الاذن [منه] في عمقها ولا يكون معه ثقل ولا تمدّد ولا حمرة في ظاهر الاذن ويكون سائر البدن سليما من الحرارة ولا يكون ما تقدّم من تدبيره يوجب حرارة، بل يكون كلّ تدبير تقدّم له من المطعم والمشرب والهواء المحيط يوجب برودة، وأن يكون الهواء باردا والرياح الهابّة شمالية. فاما إن كان التدبير المتقدم في المطعم والمشرب تدبيرا حارّا وكان الهواء حارّا وهبّت رياح جنوبية وكان الوجع نفسه مع تمدّد ومع حمرة في اللون وثقل في الرأس ، فإنّ ذلك دليل على ان الوجع من حرارة. وإن كان الوجع مع تمدّد وكان معه طنين ولم يكن معه ثقل ، فإنّه دليل على ان الوجع من ريح مستكنة في الاذن ليس لها مسلك تخرج منه. علاج وجع الاذن الذي يكون من برد. اذا صحّ عندنا بالدلائل التي وصفناها أن وجع الاذن من برد، فينبغي ان نعالجه بان نقطّر في الاذن زيتا قد طبخ فيه سذاب او دهن الناردين او دهن الغار مفتّرا او دهن قد طبخ فيه اقحوان او زيت قد اذيب فيه فرييون يسير او زيت قد غلي فيه يسير من جندبادستر

١٨٧ لاصلاحها : في اصلاحها D ١٨٨ ايضا : C - ١٨٩ الاخلاط :
 الافراط B حرارتها : حمّاها A ، حرارتها وحمّاها C,D ١٩٠ منه : B,C -
 عمقها : عنقها B,C ١٩١ معه : معها B الاذن : الابدان A ١٩٤
 كان : يكون B ١٩٥ متقدّم : مقدّم B,C حارّا : حادّا C ١٩٦ نفسه :
 في نفسه C ١٩٧ على : C - ١٩٨ معه : B - مستكنة : ساكنة B ،
 مسكنة C ١٩٩ وجع : D - الذي يكون : B,C,D ٢٠٠ وصفناها :
 وصفنا A، وضعناها C ٢٠١ نعالجه : يعالج B,C,D نقطّر : يقطر B,C,D
 زيتا : زيت B,C ٢٠٢ فرييون : اقحوان فرييون C يسير : يسيرا B,C,D
 يسير من : شيّ يسير من B

order to cure it. Earache occurs frequently as a result of the blowing of warm or cold winds; it also occurs on journies lacking this blowing of winds but when one can speak of excessive movement and of sharp, hot humours. The indications⁸⁸ for earache caused by cold are:

- 190 1. The pain is (felt) deep inside the ear.
2. The head is not heavy, the ear is not tense and does not look red.
3. The rest of the body is free of heat.
4. The earlier regimen of the body in regard to food, drink and surrounding air⁸⁹ has not heat as a necessary consequence, but cold.
5. The air is cold and the winds are blowing from the north.

The following points⁹⁰ indicate that the earache was caused by heat:

- 195 1. The earlier regimen in regard to food and drink was hot.
2. The air is warm and southern winds are blowing.
3. The pain is accompanied by tension (in the ear), by a red colour and by a heavy feeling in the head.

If, however, the pain⁹¹ is accompanied by tension and tingling (of the ear), but not with this heavy feeling in the head, it is an indication that the pain is caused by a wind which got locked in the ear and cannot find a way out.

Treatment of earache which is caused by cold:

- 200 when we have verified by means of the above-mentioned indications that the earache is caused by cold, we must treat⁹² it as follows: We drip into the ear olive oil in which has been cooked rue⁹³, or oil of nard⁹⁴, or oil of laurel⁹⁵, lukewarm, or oil in which has been cooked feverfew⁹⁶, or olive oil in which has been melted a little bit of euphorbium⁹⁷, or olive oil in which has been cooked a little bit of castor⁹⁸, or oil of balsam⁹⁹. One can also cook camomile¹⁰⁰,

٢٠٥ وودن البلسان، ويطبخ ايضا بابونج واكليل الملك وبنفسج يابس وحرمل وورق الغار في ماء حتى يغلي غليا جيّدا ويكمّد الاذن به. في علاج وجع الاذن الذي يكون من حرارة، فاما إن كان وجع الاذن من حرارة وذلك يعلم بالدلائل التي ذكرناها في ما تقدّم فينبغي ان يقطّر في الاذن بياض البيض مفتّرا مع دهن الورد او مع ماء الكاكنج او مع ماء الكزبرة الرطبة او زيت قد طبخ فيه خراطين او اصداق البحر مع الحيوان الذي في داخلها. فإنّ هذا الزيت يعمل في وجع الاذن بالطبع عملا عجيبا وذلك بان يؤخذ من هذه الاصداف التي لم تنفتح ولم يخرج ما فيها من الحيوان ثلاثة وتطبخ بزيت مغسول ويقطّر من ذلك الزيت في الاذن. ودهن اللوز الحلو اذا قطّر في الاذن نفع منفعة بيّنة، وكذلك الزيت الذي قد طبخ فيه الخنثى وهو اصل شجرة الاشراس. في علاج وجع الاذن الذي يكون من ريح استكنت في موضع السمع او من خلط آخر لزوج قد نجح في موضع السمع، فإن كان وجع الاذن من ريح مستكنة في موضع السمع ودلّت على ذلك الدلائل التي وصفناها فيما تقدّم، فينبغي ان يعالج بالعلاج الذي وصفناه في وجع الاذن الذي يكون من برودة ويقطّر فيها من تلك الادهان التي وصفناها في ذلك الباب باستعمال بخار ذلك الماء. ويستعمل فيها ايضا قطور متّخذ من خلّ وعسل وبورق

٢٠٥ وورق : وودن ورق C حتى : C - غليا : غليانا B,C,D
 في : - B,C,D ٢٠٩ او اصداق : C - ٢١٠ الذي :
 التي A ، C - ٢١١ عجيبا : عجبا A تنفتح : تفتح B,C ٢١٢
 من الحيوان : B,C,D - ثلاثة : A - ٢١٣ نفع : يقع A
 ٢١٤ خنثى : خينثا D اشراس : اشريس D في : B,C,D -
 ٢١٥ استكنت : اسكنت B,C ٢١٦ نجح : يختلج C ، لحج D
 مستكنة : مسكنة B,C,D ٢١٧ دلّت على : i.m.: C ٢١٨
 برودة : برد B,C,D ٢١٩ باستعمال : واستعمال C,D

melilot¹⁰¹, dry violets¹⁰², harmel¹⁰³ and laurel leaves¹⁰⁴ in water
 205 until thoroughly cooked and use as a fomentation¹⁰⁵ of the ear.

Treatment¹⁰⁶ of earache caused by heat:

when one has verified by the indications mentioned above that the
 earache is caused by heat, one should drip into the ear the white¹⁰⁷
 of an egg, lukewarm, with oil of roses¹⁰⁸, or with extract¹⁰⁹ of
 alkekenji¹¹⁰, or with extract of fresh coriander¹¹¹, or olive oil in
 which earthworms¹¹² or seashells¹¹³ with the animals (still) in them
 210 have been cooked. This (remedy of) olive oil is by its nature very effi-
 cacious in the case of earache and is prepared as follows: one should
 take three of those unopened shells with the animals (still) in them
 and cook them in purified olive oil. Then one should drip this olive
 oil into the ear. Oil of sweet almonds¹¹⁴, if dripped into the ear, is
 clearly useful; the same applies to olive oil in which asphodel¹¹⁵ has
 been cooked, the root of which is called *ishrās*¹¹⁶. Treatment of
 215 earache caused by wind locked in the ear or caused by another vis-
 cous humour which prospered in the ear: When the indications
 mentioned by us above prove that the earache has been caused by
 a wind that got locked in the ear, it must be treated in the same way
 as earache caused by cold. One must drip into the ear those oils
 which we have described in that chapter, whereby one uses the va-
 220 pour of their extract. One can also use drops¹¹⁷ prepared from vine-
 gar¹¹⁸, honey¹¹⁹ and borax¹²⁰, or from honey¹²¹, boiled wine and

او من عسل ونبذ مطبوخ ونظرون ويقطّر في الاذن ايضا شيئا يسيرا من مرارة الحمل مع دهن ورد ونبذ مطبوخ ودهن لوز وماء الكراث او البصل اذا فتر وخلط معه شيء يسير من عسل اذهب وجع الاذن الذي يكون من ريح وخلط لزوج. والصعتر الجبلي اذا سحق وخلط مع عسل ولبن امرأة وقطّر في الاذن اذهب وجع الاذن الذي يتولّد من ريح غليظة واخلاط لزجة. صفة دواء جامع ينفع من جميع اوجاع الاذن وثقل السمع، مجربة : يؤخذ من اللوز المقشّر من قشرته عشرون لوزة ومن البورق وزن اربعة دراهم ومن الافيون وزن اربعة دراهم ومن الكندر وزن اربعة دراهم ومن البادورد وزن اربعة دراهم ومن المرّ وزن درهم. يداف ذلك اجمع بخلّ ٢٢٥ ويتخذ منه اقراص صغار، يكون كلّ قرص منه وزن دانق ونصف. عند وقت الحاجة، إن كان وجع الاذن شديدا يداف القرص بدهن الورد ويقطّر في الاذن، وان كان يسيل من الاذن قيح ديف القرص بسكنجين او ببعض الانبذة، وان كان السمع ثقيلًا ديف القرص بخلّ خمر. فهذا ما يحتاج اليه من العمل بعلاج الاذن من العلل التي لا يؤمن ان تحدث في الاسفار. الباب السادس في الزكام والنوازل والسعال وما شابه ذلك من الاشياء التي تعرض من اختلاف الهواء وعلاج ذلك. باب ٢٣٥

٢٢١ نبذ : نيل ؟ B,C شيئا يسيرا : شيء يسير C ٢٢٢ حمل : جمل D ٢٢٣ عسل : او دهن B,C,D+ ٢٢٤ صعتر : صقر D ٢٢٥ وقطر في الاذن : D- اذهب وجع : اذهب بوجع A ٢٢٦ ثقل : لثقل A مجربة : B,C,D- ٢٢٧ يؤخذ : تأخذ B,C عشرون : عشرين B,C,D ٢٢٩ دراهم : درهم A درهم : اربعة دراهم B,C,D يداف : يغلط B s.l. ، يدان C ، يداف i.m. C ٢٣٠ اقراص : جمع قرص A i.m. منه B,C,D- ونصف : دانق C+ ٢٣٢ قيح : قيحا A ديف : اديف A ٢٣٥ نوازل : نوافل C ، نوازل i.m. C ٢٣٦ شابه : يشابه B,C من : في C ذلك : D-

natron¹²². One can likewise drip into the ear a little bit of the gall¹²³ of a lamb with oil of roses¹²⁴, or with boiled wine, or with oil of almonds¹²⁵, or the extract of leek¹²⁶ or onion¹²⁷; if this is made lukewarm and mixed with a little bit of honey¹²⁸, it takes away the earache which is caused by a wind and viscous humour. When one pounds mountain organ¹²⁹, mixes it with honey¹³⁰ and breast milk¹³¹ and drips it into the ear, it takes away the earache which is caused by a coarse wind and by viscous humours. Description of a comprehensive drug, beneficial for all kinds of earache and for hardness of hearing and proven¹³² (by experience): one must take twenty peeled almonds¹³³, four dirhams¹³⁴ of borax¹³⁵, four dirhams of opium¹³⁶, four dirhams of frankincense¹³⁷, four dirhams of thistle¹³⁸ and one dirham of myrrh¹³⁹. All this has to be mixed with vinegar¹⁴⁰; then one must prepare small pastilles¹⁴¹ from it, each weighing four and a half dāniqs.¹⁴² In case of need, when the earache is strong, one should mix the pastille with oil of roses¹⁴³ and drip this into the ear. When purulent matter is flowing from the ear, the pastille should be mixed with oxymel¹⁴⁴ or with some wine. In the case of hardness of hearing the pastille should be mixed with vinegar¹⁴⁵ prepared from wine. This is what one should do when treating the ear against these diseases of which there is a chance that they will happen on a journey.

235 *Chapter 6: On rheum, defluctions, cough and similar diseases which are caused by changes of weather¹⁴⁶, and their treatment. These*

هذه العلل اعني الزكام والبلحوة والنوازل والسعال وما اشبه ذلك تتولد في اكثر الاحوال من رطوبة فضلية تنصب من الدماغ. فإن كان انصبابها الى الانف في المجاري المشاشية التي بين الانف والدماغ سمّي ذلك زكاما، ٢٤٠ وإن كان انصبابها الى مجاري الحلق والحنانغ سمّي ذلك نزلة. وإن كان انصبابها يتجاوز ذلك حتى يصير الى قصبة الرئة وما يلي الصدر سمّي ذلك [ايضا] نزلة الى الصدر. فإن كان الفضل غليظا لزجا كان منه سعال شديد يقذف معه رطوبات فضلية، وإن كان الفضل دقيقا مائيا احدث السعال الذي يسمّى يابسا. وهذه العلل قد تتولد من سوء مزاج حارّ وبارد جميعا. فاما ما يتحرّز به منها في وقت هبوب الرياح الحارّة والباردة فقد وصفناه فيما تقدّم. ٢٤٥ واما ما يتعالج به منها اذا حدثت واستحكمت فاتّا نصفه الآن، على ان كلّ ما وصفناه في التحرّز من الزكام والنوازل من الروائح التي يستنشق قد ينتفع بها اذا استعملت بعد حدوث العلة منفعلة بيّنة. صفة البخورات التي تذهب بالزكام: القراطيس اذا اشتعلت بالنار وقربت من الانف حتى يستنشق دخانه دائما اذهبت الزكام وكذلك يفعل السكر الطبرزد اذا احرق بالنار حتى يخرج منه دخانه واستنشق دخانه نفع. وكذلك يفعل الاضطرك والكاربا والبخورات المتخذة بالافاويه العطرية الحادّة الرائحة. فان اتّصل الزكام ولم

٢٣٨ الاحوال : الامر D الانف : طاق الانف B ، طرف الانف C,D ٢٤٠
وان ... نزلة : C - ذلك : B - وان ... نزلة (٢٤٢) : A - ٢٤١ سمّي :
ذلك : سمّي بذلك B ، يسمّى ذلك C ٢٤٢ الفضل : ذلك الفضل B منه :
معه B ٢٤٣ دقيقا : رقيقا B,C,D ٢٤٥ به : B,C - وصفناه :
وصفناها لك B ، وصفنا C ٢٤٦ حدثت : احدثت C نصفه الآن : على
كلّ ما وصفناه فيما تقدّم واما ما يتعالج به منها اذا حدثت واستحكمت
D+ ٢٤٧ في : من D روائح : رياح A بها : A - ٢٤٨ البخورات : الباب
C+ ٢٤٩ اشتعلت : اشعلت B حتى يستنشق : ويستنشق B,C,D ٢٥٠
يفعل : D - ٢٥١ نفع : ينفع B,C يفعل : لذلك C+ الاضطراب :
C والكاربا : B - ، والكاربا C ، والكاهربا D ٢٥٢ المتخذة : المتصلة B,C
الحادّة : الحارّة B,C

diseases, I mean rheum, hoarseness, defluctions, cough and the like, mostly originate from superfluous phlegm which oozes from the brains¹⁴⁷. If this moisture flows to the nose through the cartilaginous channels¹⁴⁸ between the nose and the brain, it is called
 240 “rheum”¹⁴⁹; if it flows to the throat and the gullet it is called “defluccion”¹⁵⁰; and if it flows further down until it reaches the trachea and what is near the chest it is called “defluccion to the chest.” If this residue¹⁵¹ is thick and viscous it causes a bad cough with which superfluous humours are ejected. If it is thin and watery it causes a cough which is called dry. These diseases originate from a hot as well as from a cold temperament. What to use as a
 245 prophylaxis against them, when hot and cold winds are blowing, has been described by us above. Now we will give a description of the treatment of these diseases when they occur or prevail (and want to remark beforehand that) all the snuff odorants which we will describe in this chapter are clearly beneficial when used after the appearance of the disease. Description of the fumigants¹⁵² which remove rheum: papyrus¹⁵³, when burned in a fire and brought close
 250 to the nose until one sniffs its smoke, always takes away rheum. Crystalline sugar¹⁵⁴ has the same effect: When one burns it in a fire until smoke arises and then sniffs the smoke, it is beneficial. The same obtains for storax¹⁵⁵, yellow amber¹⁵⁶ and the fumigants prepared with fragrant, hot spices. When the catarrh is lasting and the

تنجع فيه الروائح الزرق على الجبهة الضماد الذي يقال له بربار او الضماد الذي يقال له اتينا او الضماد الذي يقال له انكاسيوس، وهي ضمادات مشهورة ٢٥٥ لا اختلاف في صفاتها فلذلك لم يكن بنا الى نسخها حاجة. صفة بخور نافع من النوازل منضج لجميع الفضول الغليظة المنحدرة من الرأس: يؤخذ من الاصطرك وهو ميعة الرهبان ومن المصطكى وبزر الكرفس الجبلي من كل واحد اوقية ومن الزرنبخ الاحمر وزن نصف درهم ومن حب الغار حبتين ، يدق ذلك ويجمع ويعجن بعسل ويتبخّر به من الزكام الذي لم ينضج ومن السعال الشديد، وذلك بان يوضع منه شيء يسير على جمر ويوضع عليه قمع ٢٦٠ حتى يجتمع البخار فيؤدّيه الى الموضع الذي يقصد لعلاجه. صفة شراب نافع من النوازل التي قد صارت الى الصدر وولدت سعالا: يؤخذ من بزر البنج وزن اثني عشر درهما ومن حب الصنوبر وزن ستة دراهم ومن المرّ وزن درهم، يسحق ذلك ويعجن بعقيد العنب ويؤخذ منه في كلّ غداة وعشيّ مقدار وزن درهم بماء حارّ. صفة دواء آخر يقوم مقام الحشا يذهب باوجاع السعال كلّها ويفعل فعلا قريب المنفعة: يؤخذ من العسل وزن خمسة دراهم ومن السمن وزن خمسة دراهم ومن الزوفا وزن درهمين ومن التين اربع تينات ومن الصنوبر المرضوض المنقى وزن عشرة دراهم ومن اصل

٢٥٣* بربار : بزبار A,B,D ، اتينا C او الضماد ... اتينا : C - ٢٥٤
 اتينا : اسا A انكاسيوس : انكاسيوس B,C ، الكاسوس D ٢٥٥ الى نسخها
 حاجة : حاجة الى نسخها B,C ، حاجة الى نسخها D ٢٥٦ نافع من :
 نافع D ٢٥٧* رهبان : رمان A,B,C,D ٢٥٨ واحد : واحدة B زرنبخ : زنيج
 C وزن : بوزن B الغار : الفار D ٢٥٩ يتبخّر : يتبخّر B,C,D ٢٦٠ جمر :
 فحم B,C,D + ويوضع عليه قمع : - C قمع : - B ٢٦١ يجتمع : يجمع D
 لعلاجه : علاجه B ، بعلاجه C شراب نافع : دواء نافع يشرب B ، دواء يشرب
 نافع C,D ٢٦٢ صدر : صدور C,D من : - B,C,D ٢٦٣ دراهم : درهم A
 ومن : - D ٢٦٤ وزن درهم : وزن كذا C منه : معه C في كلّ غداة : في
 الغداة B ، في كلّ غداة C ٢٦٥ وعشيّ : والعشاء B ، وعشاء C,D بماء
 حارّ : - C,D الحشا : - C ٢٦٦ فعلا : فعل B + ، - C المنفعة : الميعة C
 وزن : مقدار B ٢٦٧ دراهم : درهم A ٢٦٨ دراهم : درهم A

odorants are to no avail, one should apply to one's forehead the dressing¹⁵⁷ called *barbaros*¹⁵⁸, or the one called *athena*¹⁵⁹, or the one called *hikesios*¹⁶⁰. Since these dressings are well-known and their
 255 description is uniform, there is no need for us to copy it. Composition of a fumigant which is useful against defluctions and which boils all the thick residues which descend from the head: one should take one ounce¹⁶¹ each of storax¹⁶², namely, "storax of the monks"¹⁶³, mastix¹⁶⁴ and seed of mountain parsley¹⁶⁵, half a dirham of red arsenic¹⁶⁶ and two 'laurel nuts'¹⁶⁷; this must be pulverized, collected and then kneaded with honey¹⁶⁸. One should take it as a fumigant against catarrh which is not mature, and against a heavy
 260 cough. For that one has to put a small amount on burning coals and place a funnel over it so that the vapour can be collected. Then one should guide this vapour to the place one wants to treat. Composition of a syrup¹⁶⁹ useful against defluctions which reach the chest and cause coughing: one must take twelve dirhams of the seed of henbane¹⁷⁰, six dirhams of pine nut¹⁷¹ and one dirham of myrrh¹⁷²; this must be pulverized and kneaded with inspissated grapes¹⁷³;
 265 then one must take one dirham of it with warm water every morning and evening. Composition of another drug which can replace thyme¹⁷⁴, takes away all the pains caused by coughing and is nearly as useful: one must take five dirhams of honey¹⁷⁵, five dirhams of butter¹⁷⁶, two dirhams of hyssop¹⁷⁷, four figs¹⁷⁸, ten dirhams of pulverized, cleansed pine¹⁷⁹ and ten dirhams of the root of lily¹⁸⁰;

السوسن وزن عشرة دراهم، يطبخ الزوفا والتين والصنوبر واصل السوسن
 ٢٧٠ بماء قدر رطلين حتى يبقى نصف رطل، ثم يصفى ويلقى عليه العسل
 باب والسمن ويطبخ حتى يصير في ثخن اللعوق. الباب السابع في علل
 العين التي تحدث عن اختلاف الهواء والغبار والرياح وعلاج ذلك. اما غبار
 تراب الارض النقيّة التي لا يشوبها شيء من الرمل ودقاق التبن والرماد
 وما شابه ذلك فانه ليس بضارّ للعين الصحيحة. وذلك ان جوهر العين
 ٢٧٥ بالجملة رطب وكلّ ارض طبيعتها يابسة، وما انسحق منها حتى يصير
 غبارا اذا كان من ارض محضة لا يشوبها شيء غيرها فهو لا محالة يابس،
 فمن هذه الجملة والجهة يقاوم رطوبة العين ويصلحها. فاما العين التي
 فيها علّة من رمد او من عرض آخر فان الغبار لها ردىّ لانه لا
 يؤمن ان يحدث فيها حادث من حرارة او حدة او غير ذلك من الآفات ،
 ٢٨٠ ولذلك ينبغي ان يتوقّى منه في الاعين التي فيها علّة غاية التوقّي .
 ومما يحفظ العين ويقوّيها ويمنع من آفات الغبار والحرّ والعرق هذا
 البرود: يؤخذ نشاستج الحنطة وزن اربعة دراهم ومن الصمغ وزن درهمين
 ومن اسفيداج الرصاص واقليميا واثمد من كلّ واحد وزن درهم ، تجمع هذه

٢٦٩ دراهم : درهم A ٢٧٠ العسل والسمن : C,D inv. ٢٧١ اللعوق :
 العلوق B ٢٧٢ التي : الذي B,C عن : من B,C علاج : غير B,C
 ٢٧٣ تراب : B - من الرمل : من الرماد والرمل B,C,D دقاق : رقاق C
 والرماد : B,C - ٢٧٤ شابه : يشابه B بضارّ : بغبار C ٢٧٥ وما
 انسحق ... يابس (٢٧٦) B i.m. : ٢٧٦ محضة : محض B,C,D شيء :
 B,C - غيرها : B - الجملة والجهة : الجهة B ، الجملة C ،
 الجبهة D ٢٧٩ يؤمن : وحده D + غير ذلك : غيره C ٢٨٠ لذلك :
 كذلك B,C,D ٢٨١ يحفظ : يحفظه C يقوّيها : يوقّيها B عرق : غرب B ،
 والتعب B + هذا البرود : من هذا البرد D ٢٨٢ برود : صفته B,C,D +
 دراهم : درهم A ٢٨٣ اسفيداج : استيداج C واقليميا: B - ائمد :
 سنك سمة A i.l.

the hyssop, figs, pine and root of lily must be cooked in two ratls¹⁸¹
 270 of water until one half of a ratl is left; one must filter this, add the
 honey and butter and cook it until it gets the consistency of a
 lohoch¹⁸².

*Chapter 7: On eye diseases*¹⁸³ which are caused by a change¹⁸⁴ in the
 weather, dust or winds, and their treatment. Dust¹⁸⁵ which is not
 mixed with sand, chaff or ashes and the like is not harmful to the
 healthy eye. For, in short, the nature of the eye is moist, while earth
 275 is by its nature dry; earth pounded until it becomes dust is also un-
 avoidably dry if it is pure, not mixed with something else. From this
 point of view this pure dust counteracts the moisture of the eye and
 is even beneficial to it. Dust is harmful, however, to the eye suffering
 from a disease of ophthalmia¹⁸⁶ or some other injury. For one can
 be sure that some accident, caused by warmth, sharpness or some-
 280 thing else, will happen to it. Therefore it is necessary to be very
 much on one's guard against dust in the case of an eye disease. One
 of the drugs that preserves, strengthens and protects the eye from ac-
 cidents caused by dust, heat and sweat is the (following)
 collyrium¹⁸⁷: one must take four dirhams of starch¹⁸⁸ of wheat¹⁸⁹,
 two dirhams of gum Arabic¹⁹⁰ and one dirham each of white
 lead¹⁹¹, cadmia¹⁹² and stibnite¹⁹³; all these drugs must be pounded,

الادوية مسحوقة منخولة بحريرة وترفع في اناء وتستعمل عند الحاجة
 ٢٨٥ ان شاء الله. صفة برود آخر ابيض يقوي الناظر ويذهب بالدمعة:
 يؤخذ صدف محرق ولؤلؤ من كل واحد وزن درهم ونشاستج الحنطة
 وزن درهم واثمد وزن درهمين وتوتيا هندي وزن اربعة دراهم وكافور
 وزن دائق، تدق هذه الادوية وتسحق وتنخل بحريرة وترفع في اناء
 وتستعمل عند الحاجة ان شاء الله. صفة برود آخر يطفى الحرارة
 ٢٩٠ من العين: يؤخذ اسفيداج الرصاص وزن خمسة دراهم وشاذنج ومارقشيثا
 ولؤلؤ من كل واحد وزن ثلثة دراهم، صمغ وزن درهم، نحاس محرق وزن
 اربعة دراهم، مسك وزن حبتين، تجمع هذه الادوية مسحوقة منخولة
 بحريرة وترفع في اناء وتستعمل عند الحاجة ان شاء الله. صفة طلاء
 للاورام الحادة الملتببة في العين: يؤخذ مرّ وصبر وعصارة الماميثا وحضض
 ٢٩٥ وزعفران وافيون واقاقيا وطين ارمني اجزاء سواء، تسحق وتنخل وتداف
 بماء عنب الثعلب وتستعمل عند الحاجة. صفة طلاء آخر يوضع على
 الصدغين فيصلح آفات العين واوجاعها الشديدة: يؤخذ مرّ وزعفران وافيون
 وبزر البنج وكندر اجزاء سواء ويطلق على قرطاس ويصير على الصدغين.

٢٨٤ الادوية A - عند : وقت B,C,D ٢٨٥ ناظر : عين B ٢٨٦ وزن : C,D -
 درهم B - درهمان C ، درهمين D ٢٨٧ دراهم : درهم A كافور :
 مسك C ٢٨٨ دائق : دق A ، حبتين C تدق : تجمع C وتسحق
 وتنخل : مسحوقة منخولة C بحريرة : C - ٢٨٩ صفة برود ... ان شاء
 الله (٢٩٣) : C - ٢٩٠ دراهم : درهم A شاذنج : هندي B,D +
 مارقشيثا : مارقشيثا A ، من قشيشا D ٢٩١ واحد : منها B + دراهم :
 درهم A صمغ وزن درهم : وصمغ وزن ستة دراهم وصمغ وزن درهم B ،
 وصمغ مثله درهم D ٢٩٣ طلاء : للعين B + ٢٩٤ للاورام : الاورام C
 الحادة : الحارة B,C,D حضض : حنظل D ٢٩٥ افيون : افيتيمون B,C ،
 افيتيمون D افاقيا : قاقيا A اجزاء : B,C - حاجة : ان شاء الله B,C,D +
 ٢٩٧ آفات : ادات C ٢٩٨ كندر : كدر D

sifted and collected in a piece of silk, stored in a vessel and used in
 285 case of need, God willing. Composition of another, white collyrium,
 which strengthens the iris and takes away tears: one must take one
 dirham each of burned seashells¹⁹⁴ and of pearls¹⁹⁵, one dirham of
 starch¹⁹⁶ of wheat, two dirhams of stibnite¹⁹⁷, four dirhams of Indi-
 an tutti¹⁹⁸ and one dāniq¹⁹⁹ of camphor²⁰⁰; these drugs must be
 pounded, sifted in a piece of silk, stored in a vessel and used in case
 of need, God willing. Composition of yet another collyrium which
 290 extinguishes the heat in the eye: one must take five dirhams of white
 lead²⁰¹, three dirhams each of haematite²⁰², marcasite²⁰³ and
 pearls²⁰⁴, one dirham of gum Arabic²⁰⁵, four dirhams of burned
 copper²⁰⁶ and two ḥabbas²⁰⁷ of musk²⁰⁸; these drugs must be
 pounded, sifted and collected in a piece of silk, stored in a vessel and
 used in case of need, God willing. Description of a liniment²⁰⁹ for
 sharp, burning eye aches: one must take equal parts of myrrh²¹⁰,
 aloe²¹¹, extract of horned poppy²¹², lycium²¹³, saffron²¹⁴,
 295 opium²¹⁵, acacia²¹⁶ and Armenian bole²¹⁷; this must be pounded,
 sifted, mixed with extract of black nightshade²¹⁸ and used in case of
 need. Composition of another liniment which, when applied to the
 temples, heals the diseases and severe pains of the eye: one must take
 equal parts of myrrh²¹⁹, saffron²²⁰, opium²²¹, henbaneseed²²² and
 frankincense²²³, smear this on paper and then apply to the temples.

باب الباب الثامن في امتحان المياه المختلفة ليعلم أيها اصلح، اجود المياه ٣٠٠ واحمدها: ما كان لا طعم له ولا رائحة ولا لون وهذا الجنس من المياه يكون صافيا، سليما من مخالطة سائر الاجسام آياه. وذلك ان كل ماء يحس له طعم او لون او رائحة فإنما يحس ذلك فيه من جوهر آخر قد خالطه، فيظهر ذلك الجوهر في طعمه ولونه ورائحته. ولذلك ينسب ذلك الماء الى ذلك الجوهر الذي خالطه فيسمى ماء كبريتي او بورقي او قفري او نظروني ٣٠٥ او بغير ذلك من الاسماء. فما كان سليما من مخالطة شيء من هذه الجواهر فإنه لا محالة يكون صافيا في لونه، لذينا قي ذوقه، طيبا في رائحته، ينفذ عن المعدة الى الاعضاء نفوذا سهلا. فاما ما غلبت عليه رائحة كريهة او طعم رديء او لون كدر فينبغي ان يجتنب. واغوى دلائل الماء المحمود: الدليل الذي ذكره بقراط وهو ان يبرد سريعا ٣١٠ ويسخن سريعا وان يكون في ينبوعه في الصيف باردا وفي الشتاء فاترا. والمياه المجتمعة من الامطار في نقايح نظيفة هي مياه محمودة نافعة لان الشمس قد طيبتها واذهبت كل آفة كانت فيها وسختتها وحللت اجزاءها. فاما المياه التي تكون من ذوبان الثلج والجليد وما شابه ذلك

٣٠٢ طعم او لون : طعما او لونا A او لون : D - ٣٠٣ فيظهر ذلك الجوهر في طعمه : فيظهر طعم ذلك الجوهر فيه A,B,C,D ٣٠٤ خالطه : فيه B + ماء كبريتي : بالكبريتي B,C,D قفري : مصري C ٣٠٥ بغير : غير B,C,D من مخالطة شيء : B,C,D - ٣٠٦ جواهر : خواص C,D فانه : لا يكون C + في لونه : لونه C ذوقه : طعمه C ٣٠٧ غلبت : غلب B ٣٠٩ الماء المحمود : المياه المحمودة B,C,D ٣١٠ ويسخن سريعا : ومن الناس من يمتحن المياه بالوزن فيحكم لاحفها بانه اجود (اجودها D) وهذه المحنة (المتحنة C i.m.) ليست بصحيحة الى ان (لان C) تجتمع معها الدلائل (الآخر C,D +) المحمودة ، اعني طيب الرائحة وعذوبة الطعم والصفاء (صفاء اللون C,D) والنفوذ في (من D) المعدة سريعا وان يسخن سريعا وان يبرد سريعا B,C,D باردا : بارد C فاترا : فاتر C ٣١١ والمياه : ولليا C، والماء D المجتمعة : المجتمع D امطار : اخطار D نظيفة : نظيفهن D هي : D - ٣١٢ اذهبت : عنها C,D + كل : بكل A كانت فيها : C inv. وسختتها : B,C,D - ٣١٣ شابه : يشابه C

Chapter 8: On the testing of the different waters²²⁴ in order to find
 300 out which one is best. The best water is that which is tasteless,
 odourless and colourless²²⁵; this kind of water is pure, not mixed
 with other elements. For taste, colour or smell which one perceives
 in any kind of water is caused by another element with which it is
 mixed. This element manifests itself in its taste, colour and smell.
 That (kind) of water is therefore attributed to the element that is
 mixed with it and called water of sulfur²²⁶, of borax²²⁷, of
 305 bitumen²²⁸, of natron²²⁹ and similar names. The (kind) of water
 which is not mixed with any of these elements necessarily has a lim-
 pid colour, a delicious taste and a good smell. It also passes easily
 from the stomach²³⁰ to the organs. Water in which either a disgust-
 ing smell, a bad taste or a turbid colour dominates should be avoid-
 ed. The best indication for good water is the one mentioned by Hip-
 310 pocrates: it is quickly cold, but also warm²³¹; in summer it is cold
 in its well, but in winter lukewarm²³². Rainwater²³³ collected in
 clean wells is good and beneficial, because the sun has improved (its
 quality), removed every disease from it, heated it and dissolved its
 (different) parts. All waters derived from melted snow²³⁴ and ice

فهي كلّها رديئة ضارّة، وذلك ان في وقت جمودها يتحلّل كلّما كان
 ٣١٥ فيها من جوهر رقيق لطيف ويبقى اغلظ جوهرها واكثفه. فلذلك ينبغي
 ان تجتنب وكذلك كلّ ما كان من المياه مجتمعا في مواضع مستترة عن
 الشمس كثيرة التبن والطين فانها كلّها رديئة. الباب التاسع في اصلاح
 المياه الفاسدة فإن اضطرّ مضطرّ الى ان يشرب شيئا من هذه المياه
 الفاسدة التي قد غلب عليها بعض الجواهر الرديئة، فينبغي ان يحتال
 ٣٢٠ لاصلاحها بما اصف: ينبغي اولا ان يطبخ طبخا صالحا، اعني ان يغلي
 على النار وان يمزج بعد الطبخ ببعض الانبذة او الافشرجات، وان يكون
 ما يمزج به من الانبذة في ضدّ طعم الماء. فإن كان طعم الماء مائلا
 الى القبض والبشاعة مزج بنبذ حلو وان كان مائلا الى الملوحة مزج
 بنبذ قابض الطعم. وما كان من المياه غليظا من كدورة فيه فينبغي ان
 ٣٢٥ يصفى مرارا حتى يصفو وتذهب عنه كدورته. فإن جعلت الاسوقة احد ما
 يصفى به كان ذلك صالحا، لان الاسوقة من شأنها تصفية الماء وتعذيبه.
 وما كان من المياه شديد البرد مفرطه فينبغي ألا يشرب إلا بعد
 الطعام وان يكون مصّا ليوافق المعدة والاعضاء الداخلة شيئا بعد شيء
 ولا يواقعها دفعة فيؤلّمها. وما كان من المياه ظاهر الرداءة فينبغي ان

٣١٤ في : B,C,D- ٣١٦ كلّ : B,C,D- مستترة : مستترة D ٣١٧
 تبن : ثفن A فانها كلّها رديئة : C- ٣١٩ الرديئة : B- ٣٢٠ اولا :
 B s.l. ، C- يطبخ : اولا C+ ٣٢٢ كان طعم الماء : كان الطعام D
 ٣٢٣ بنبذ : نبذ A ٣٢٤ الطعم : C- ٣٢٥ كدورته : كدوره C,D
 الاسوقة : الاسوقة C احد : اخذ D ٣٢٦ الاسوقة : الاسوقة C ٣٢٧
 مفرطه : المفرط C ، مفرط D ٣٢٨ الداخلة : C- ٣٢٩ ظاهر :
 ظاهرة A رداءة : رداءة A

315 and the like are bad and harmful. For when they were frozen, the thin fine elements were dissolved and only the coarsest and thickest elements were left. It is therefore necessary to avoid them. Any amount of water collected in places hidden from the sun and containing much straw and mud is bad.

Chapter 9: On the improvement²³⁵ of contaminated water. If someone is forced to drink some of this contaminated water, in which
 320 some bad element dominates, it is necessary to apply the remedies which I will describe in order to improve it: one must first of all boil²³⁶ this water well; I mean on a fire. Then when it boils one should mix it with some wine²³⁷ or juice²³⁸. The taste of the wine used for mixing must be contrary²³⁹ to that of the water. If the taste of the water tends towards astringency and bitterness, it must be mixed with sweet wine; but if it tends towards saltiness, it must be
 325 mixed with wine astringent of taste. And water²⁴⁰ which is thick of turbidity must be strained several times until it is pure, without turbidity. If the meal of wheat²⁴¹, barley or vetches is one of the (means) used to purify water with, it is very good. For this has a natural propensity to purify and sweeten water. Water²⁴² which is extremely cold must not be drunk except after meals and then only by sucking. In this way it enters the stomach and the interior organs
 330 little by little and not all at once, which would hurt. In water that is clearly bad it is necessary to cook chickpeas²⁴³; then one can eat

٣٣. يطبخ فيه حمّص ويؤكل الحمّص ويشرب ماءه، ويطبخ فيه رازيانج او قرع ويؤكل الرازيانج والقرع ويشرب ماءه. ومن احمد ما يؤكل من الاطعمة، مما يذهب برداءة المياه الرديئة وضررها: السلق والبقلة اليمانيّة والبقول التي معها حلاوة مثل الرازيانج والكرفس والشبث والهندباء وما شابه ذلك. فاما ما يذهب برداءة طعم الماء فالبلوط والشاه بلوط والحبة الحضرأء باب ٣٣٥ والسّمسم واصناف البقول كلّها. الباب العاشر في احتيال ما يذهب بالعطش عند عدم الماء او قلّته. منافع شرب الماء في بدن الانسان منفعتان : احدهما ترطيب الغذاء الجافّ اليابس لتعضمه المعدة والاخرى تبريد الحرارة المفرطة التي تحدث عن الحركات الشديدة والهواء الحارّ. وقد يحدث العطش ايضا من جفاف الفم واللهوات وفناء الرطوبة التي ترطب اغشية الحنك وما يتّصل به من علّة حادثة فيكون من ذلك عطش. ولذلك يقال ٣٤. ان من قطعت لهاته لا يصبر على العطش البتّة، لانه قد عدم العضو المؤلّد للرطوبة التي ترطب بها الحنك واغشية المعدة ترطيبا دائما. وقد يعرض العطش ايضا من شرب نيّذ كثير فيحمّي الجوف ويحرقه فيتولّد عن ذلك عطش، وتكون الحاجة عند ذلك من الماء الى التبريد ٣٤٥ اكثر منها الى الترطيب. فاما العطش الذي يكون من اكل الاشياء المالحة

٣٣٠ قرع : قرعا A ٣٣٢ رداءة : رداءة A وضررها : مثل C+ سلق : چغندر A i.m. البقلة : الباقلة C ٣٣٣ حلاوة : تفتيح B,C ، تفتح D شبت : شبت D ٣٣٤ رداءة : رداءة A الماء : المياه B,C ٣٣٥ في احتيال ... قلّته (٣٣٦) : الاحتيال في عدم الماء وقلّته وبما يذهب العطش A ٣٣٧ الاخرى : الآخر B,C ٣٣٨ المفرطة : المفرطة C : المفرطة C i.m. الحارّ : - C ٣٣٩ اللهوات : اللذات C فناء : منا C ترطب : تطب C ٣٤٠ عطش : شديد B+ ولذلك : وكذلك C ٣٤١ ان : - C لهاته : لهته D ٣٤٢ رطوبة : رطوبات B,C,D ترطيبا : ترطيب B ٣٤٣ الجوف : - A ٣٤٤ عطش : شديد B+ ترطيب : تطيب C

the chickpeas and drink the water. One can also cook fennel²⁴⁴ in it or gourd²⁴⁵; then one can eat the fennel or gourd and drink the water. The best kinds of food which take away the bad quality of contaminated water and render it harmless are: beet²⁴⁶, wild amaranth²⁴⁷ and sweet vegetables such as fennel, celery²⁴⁸, dill²⁴⁹, endive²⁵⁰ and the like. A bad taste in water is taken away by: acorn²⁵¹, sweet chestnut²⁵², fruit of the turpentine tree²⁵³,
 335 sesame²⁵⁴ and by all vegetables.

Chapter 10: On artful means²⁵⁵ to dispel thirst in the case of lack or paucity of water. The usefulness of drinking water for the human body is twofold:

1. It moistens the dry food so that the stomach can digest it.
2. It cools the excessive heat which arises from intensive movements and hot air.

Thirst can also be caused²⁵⁶ by dryness of the mouth and uvula, by the lack of moisture which continually moistens the skin of palate
 340 and by related accidents occurring [and causing thirst]. Therefore it is said that someone whose uvula has been cut off cannot at all endure thirst, because he lacks the organ which produces the moisture with which the palate and skin of the stomach are continually moistened. Thirst also arises from the drinking of much wine²⁵⁷ which heats and burns the belly [from which thirst originates]. In this case there is more need for water in order to cool than in order
 345 to moisten (the belly). Thirst which results from eating salty²⁵⁸

فانه تجتمع فيه المعينان جميعا، اعني اليبس والحرارة، اذا كانت الملحوة من شأنها ان تفعل ذلك. فمنَ عدم الماء واحتاج ان يداوي نفسه لثلا يعطش، فينبغي اوّلا ان يقلّل الغذاء وان يكون ما يغتذي به من الاغذية التي هي في جوهرها باردة رطبة كالبقول والفواكه الباردة ٣٥٠ الرطبة، وان يدهن اطرافه بدهن الورد مبرّدا وبغيره من الالدهان الباردة الرطبة. واقوى ما يستعمل في ذهاب العطش ان يلاك بزر الخس الاسود واصل السوس وبزر القثا، كل ذلك اذا امسك في الفم ولبث وقتا طويلا اذهب العطش. وقد يتّخذ اقراص تمسك في الفم فيمنع العطش وصفتها : يؤخذ بزر القثا مقشّرا وزن ثمانية دراهم ومن كثيرا وزن اربعة دراهم، ٣٥٥ يداف كثيرا ببياض البيض الطري، فاذا ذاب سحق بزر القثا المقشّر والقبي عليه ويتّخذ منه اقراص ويجفّف في الظلّ، فاذا احتيج اليه اخذ منه قرص وامسك في الفم تحت اللسان فكلّما ذاب منه شيء ازدرد فانه يذهب بالعطش. وعصارات الفواكه الرطبة والبقول الباردة اذا عصرت واستعملت سكّنت العطش. والبزر قطونا اذا بلّ بماء الخيار او ببعض مياه الفواكه ٣٦٠ حتى يستخرج لعابه وامسك في الفم حتى يجتمع له لعاب كثير وابتلع شيء بعد شيء يذهب العطش، وكذلك يفعل حبّ السفرجل. الباب

٣٤٦ تجتمع فيه المعينان : تجتمع المعينين A ٣٤٧ واحتاج : احتاج B
 ٣٤٨ وان : او بان C,D ٣٤٩ فواكه : فاكهة B ٣٥٠ اطرافه : B,C,D-
 الورد : اللوز C ٣٥١ الخس الاسود : الخنثا الاسود A ٣٥٢ سوس :
 سوسن A ولبث : B,C,D- ٣٥٣ العطش : بالعطش A اقراص : اقواصا A
 تمسك D- يمنع : يمنع D ، من ذلك C+ وصفتها : دواء يمنع من العطش
 C+ ٣٥٤ مقشّرا : المقشّر B,D ، دراهم : درهم A ٣٥٦ احتيج : احتاج
 B,C منه : وزن C+ ٣٥٧ في الفم : C,D- ازدرد : ابتلع B,C,D ٣٥٨
 بالعطش : العطش B,C ، ان شاء الله B+ ، ان شاء الله تعالى C,D+
 عصارات : عصارة B,C ٣٥٩ البزر قطونا : بزر القطونا B ٣٦٠ حتى
 يجتمع له لعاب كثير : لعابا كثيرا B، لعاب كثيرا C، لعاب كثيرة D
 ابتلع : يلع B,D، يتلع C ٣٦١ العطش : بالعطش B

things contains both elements, I mean dryness and heat. For saltiness has a natural propensity to effect this. If someone lacks water and needs a cure against thirst, he could first of all eat less. The food he takes should be of a cold, moist nature, such as vegetables and
350 cold, moist fruit. He should anoint²⁵⁹ the extremities (of his body) with cold oil of roses²⁶⁰ or with other cold, moist oils. The most effective cure to take away thirst is to chew black lettuce seed²⁶¹, licorice root²⁶², or the seed of cucumber²⁶³; all these (drugs) eliminate thirst when kept in the mouth for a long time. One can also take pastilles²⁶⁴ which, when kept in the mouth, prevent thirst; their composition is: one should take eight dirhams of husked seed of cucumber²⁶⁵ and four dirhams of gum tragacanth²⁶⁶; the gum
355 tragacanth must be mixed with the fresh white²⁶⁷ of eggs; when this is melted, one should pound the husked seed of cucumber and add this; from this one should prepare the pastilles and dry them in the shade. In case of need one should take a pastille, keep it in one's mouth under one's tongue and swallow what melts; this allays thirst. When one takes the juice of moist fruit or vegetables²⁶⁸, it quenches one's thirst. Composition of another drug which allays thirst: one has to moisten flea wort²⁶⁹ with juice of cucumber²⁷⁰ or with some juice of vegetables until its mucilage is extracted; then one has to
360 keep it in one's mouth until much mucilage is collected, which must be swallowed little by little. The seed of quince²⁷¹ has the same effect.

الحادي عشر في التحرز من الهوامّ جملة. أوّل ما ينبغي ان يتحرز به من الهوامّ ان يرشّ الموضع الذي لا يؤمن فيه من الهوامّ بما قد طبخ فيه بابونج كل حنظل وحرمل او ثوم او الحشيشة التي يقال لها بنجنكشت ، ٣٦٥ وان يسدّ جميع موضع الاجحرة التي فيه والمواضع التي لا يؤمن ان تخرج منها الهوامّ، وان يبخّر الموضع بهذه البخورات. صفة ما يتبخّر به فيذهب بالهوامّ : يتبخّر الموضع بقرن الايل او باظلاف المعزى او بشعورها او بالحجر الذي يسمّى بمغناطيس او بمقل اليهود او بخور السرو او بورق الشونيز او بورق الفنجنكشت او بالسكبينج او بالجندبادستر او بالكاربا، كلّ هذه الاشياء إن يبخّر بها او ببعضها او بواحد منها اذهبت رائحتها الهوامّ ٣٧٠ المؤذية إن شاء الله. صفة بخور يذهب بالبعوض والبقّ والجرجس: يؤخذ من القلقديس وبزر الشونيز البرّي والكمّون اجزاء متساوية فيبخّر بها الموضع مرارا كثيرة، وينبغي ان توقد نار قويّة في الموضع الذي يتخوّف فيه من الهوامّ فإن الهوامّ تهرب من ضوء النار، وينبغي ان يفرش في المواضع التي يتخوّف فيها من الهوامّ من حشيش الاشراس والفنجنكشت والصعتر البرّي والفودنج ٣٧٥ النهري

٣٦٢ الهوامّ جملة : B,C,D inv. ٣٦٣ يرشّ : ارض B,D+ ، ارض الموضع C ، ارض الموضع C i.m. من : A- بما : فيه B+ ٣٦٤ او الحشيشة التي يقال لها بنجنكشت : او بنجنكشت B,C ، فنجنكشت D ٣٦٥ يسدّ : -C ، يبخّر C i.m. جميع موضع الاجحرة التي فيه : المواضع بجميع الاجحرة التي فيها B ، مواضع جميع الاجحرة C ، مواضع جميع الاجحرة التي فيها D اجحرة : بتقديم الجيم على الحاء ، مقام الهوامّ A i.m. يؤمن : من C+ ٣٦٦ منها : منه D وان يبخّر الموضع : B,C,D- يتبخّر : يبخّر B,C ٣٦٧ يتبخّر : يبخّر B,C,D المواضع : المواضع C باظلاف : اظلاف B ٣٦٨ بمغناطيس : بماغاطس A,B ، في الاختيارات غاغاطس A i.m. ، غاغاطس C,D سرو : يتروا D الشونيز : او شونيز B+ ٣٦٩ كاربا : كارفوايا B ، كراويا C ، كاه D كلّ : او بكل D ٣٧٠ ان يبخّر : واذا تبخر D ٣٧١ ان شاء الله : باذن الله تعالى B,C,D الجرجس : الجرجس والقرقس البق الصغير A i.m. ٣٧٢ القلقديس : الفلفل B,C اجزاء متساوية : متساوية الاجزاء B,C,D بها : به B,D ٣٧٣ نار : نارا A فيه : فيها B ٣٧٤ تهرب : تقرب A ضوء : ضرر B مواضع : موضع A ٣٧٥ الهوامّ : هوامّ الارض B,C,D اشراس : اشرس D الصعتر : بالصعتر B,D الفودنج : بالفودنج B ، بالعرتنج C ، فوتنج C i.m. ، بالقوشح D

Chapter 11: On the prophylaxis against vermin²⁷² in general. As a prophylaxis against vermin one should first of all sprinkle one's habitat where one is not secure from vermin with water in which has been cooked camomile²⁷³, colocynth²⁷⁴, harmel²⁷⁵ or garlic²⁷⁶, or
 365 the herb called chaste tree²⁷⁷. Then one should fill up all the holes through which one knows vermin will escape. One should fumigate the place with the following fumigants²⁷⁸ which will chase vermin away; their description is: [one should fumigate the place with] the horn²⁷⁹ of a stag, or the hoof²⁸⁰ of a goat, or its hair, or the so-called magnetstone²⁸¹, or false bdellium²⁸², or [the fumigant of the] cypress²⁸³, or the leaves of black cumin²⁸⁴, or the leaves of chaste tree²⁸⁵, or sagapenum²⁸⁶, or castor²⁸⁷, or yellow amber²⁸⁸. If one
 370 uses all of these fumigants, or some of them, or one of them, the smell will drive away noxious vermin, God willing. Composition of a fumigant which chases away mosquitoes, gnats and bugs²⁸⁹: one should take equal parts of yellow vitriol²⁹⁰, seed of wild black cumin²⁹¹ and cumin²⁹² and fumigate the place several times. One should light²⁹³ a strong fire where one fears vermin; for vermin flee the light of the fire. And one should spread on those places the herbs
 375 asphodel²⁹⁴, chaste tree²⁹⁵, headed thyme²⁹⁶, water mint²⁹⁷, worm-

والشيخ والقيسوم والجعدة والمشكطرامشير، فإن لم يتهيأ من هذه الحشائش ما يفرش به المكان كله جعل منها حول المرقد والمجلس، فانها تمنع من الهوام كلها. فان اتفق ان يكون المنزل في هذا السفر في الصحاري فينبغي ان يتوقى النزول تحت الاشجار والرقود تحتها فان كثيرا من الاشجار البرية تكون فيها الهوام، فاذا جعل الرقود تحتها نزلت بدخان النار وقد قويت بحرارتها فافسدت وآذت. فاما الآنية فينبغي ان يستقصى بسد رؤوسها ولا سيما في المواضع التي يتخوف فيها من الحيات، ولتكن اغطية الآنية الصغار من القواريح والدساتيج وما فيه الاشربة وما شابه ذلك متخذة من شمع قد خلط فيه برادة العاج وبارزد وكمون ٣٨٥ كرماني، فان هذه الاشياء لا يكاد يقربها شيء من الهوام. فاما الزناير والنحل فانه يتحرز منها بالتمسح بدهن الخبازي وبماء

باب وباستعمال الادهان في المواضع التي يخاف مضرتها فيها. الباب الثاني عشر في صفة علاج عام من لسع الهوام جميعا. فان عرض لاحد ان تناله آفة من بعض الهوام ايها كان، فاول ما ينبغي ان يبدأ به من العلاج ان يمسّ موضع مصّا شديدا وان يكون الذي يمسّه ليس بصائم ٣٩٠

٣٧٦ مشكطرامشير : ملاطراسير B ، ملاطن كذا المسير C ، مسكطرامشي D
 ٣٧٧ به : C - من الهوام : الهوام منه B,C,D ، ان شاء الله + B ، ان شاء الله تعالى C,D+ ٣٧٨ في الصحاري : - B ٣٧٩ رقود : وقود B,D ، قعود C ٣٨٠ الهوام : - B رقود : وقود B,C,D بدخان النار : من بخار حرارة النار B ، من حرارة بخار النار C,D ٣٨١ وآذت : ولآذت B,C ، فأذت D الآنية : الاواني B,C,D ٣٨٢ رؤوس : رؤس A,B,C,D ٣٨٣ الآنية : الاواني B,C,D قوارير : دساتيج : دبايح D ، انية تحرك باليد معرب دستي ق A i.m. ٣٨٤ متخذة : يتخذ B,C ، متخذ D بارزد : باردو C ، مازود D ، باردا B ٣٨٥ الاشياء : كلها C,D+ ٣٨٦ زناير : زناير B يتحرز : يتخوف A منها : فيها C التمسح : التمسع C بدهن : بورك B,C,D الخبازي : الخبازا A ٣٨٧ مضرتها : معرتها C ٣٨٨ صفة : - B,C,D عام : - C جميعا : - B,C ٣٨٩ ايها : بها C ٣٩٠ يمسّه : يمسّ B

wood²⁹⁸, southernwood²⁹⁹, cat-thyme³⁰⁰ and dittany of Crete³⁰¹. If one does not have enough of these herbs to cover the whole place³⁰², one must put some of them around the place where one sleeps and sits. When one's halting place on this journey happens to be in the desert, one should be careful not to halt or lie down under a tree³⁰³. For many wild trees contain vermin and when one lies down under them, the vermin, descending because of the smoke of the fire and strengthened by its heat, cause injuries and harm. As to the vessels, one should take care to close their top, especially where one fears snakes. The lids of small vessels, such as glass bottles, jugs and other small vessels containing liquids [and the like], should be made of wax in which grindings of ivory, galbanum³⁰⁴
 380 and black caraway³⁰⁵ have been mixed. For hardly any vermin gets near to these substances. As for hornets and bees, one should use as a prophylaxis against them the anointment with oil of mallow³⁰⁶ or its extract, or the application of the different kinds of oils to those places where one fears their injuries.

Chapter 12: On the description of a general treatment of stings and bites³⁰⁷ caused by vermin [in general]. If someone is stung or bitten
 390 by vermin³⁰⁸, the first treatment one should apply is to suck the bite thoroughly. The person who does the sucking should not have an empty stomach, but should have taken some food. Before he begins

بل يكون قد تناول طعاما وان يتمضمض قبل المصّ بنيذ مطبوخ وان
يمسك في فيه زيتا في وقت مصّه. فاذا مصّه فينبغي ان يأخذ قدح
زجاج ويشعل [فيه] فتيلة بالنار، فاذا استوقدت يلقبها داخل القدح
ويكبّ القدح على الموضع ويكبسه، فان القدح عند ذلك يقوم مقام
المحجمة ويجذب السمّ من داخل الاعضاء الى خارجها. ثمّ يشترط
الموضع المنتفخ ويمصّ حتى يخرج منه دما صالحا، فان بخروج ذلك الدم
يخرج السمّ ان شاء الله. وينبغي بعد ذلك ان يضمّد الموضع بالادوية
الحارّة التي لها جذب قوي مثل رماد الكبريت ورماد ورق التين او
لباب الخبز او بصل مدقوق او كراث البقل او ذيل الغنم. كلّ ذلك
٤٠٠ يخلط معه ملحاً مدقوقاً ويعجن بمريّ او بخلّ او بهما جميعا ويضمّد
به الموضع. والزفت الرطب اذا ضمّد به موضع اللسع نفع
منفعة بيّنة. وينبغي ان يطلي الموضع ايضا بخلّ قد طبخ فيه فودنج
جبلي وصعتر او بماء البحر او بماء مالح، فان هذه الاشياء تجذب
السمّ ايّ سمّ كان وتخرجه ان شاء الله. وينبغي ان يضمّد الموضع
٤٠٥ بفراخ الحمام وفراريج ذبحت من ساعتها حارّة ويشدّ على العضو،

٣٩١ طعاما : شيئا C يتمضمض : يتمضمض A مطبوخ : - C ٣٩٣ فيه :
- B,C يلقبها : C ٣٩٤ ويكبسه : - B,C,D ٣٩٥ يجذب :
يجلب D الاعضاء : العروق C يشترط : شرط تيغ زدن A i.m. ٣٩٦
منتفخ : منفخ D ، دما صالحا : دم صالح B,C,D فان ... ان شاء
الله (٣٩٧) - B ٣٩٧ السمّ : ايضا C,D+ ٣٩٨ رماد كبريتي و :
- C ٣٩٩ ذيل : ذيل D ٤٠٠ ملحاً مدقوقاً : ملح مدقوق B,C,D
٤٠١ الرطب : ايضا B,C,D+ ٤٠٢ يطلي : يبلّ B,C,D فيه : - B
فودنج : فوتنج B,C,D ٤٠٤ الله : تعالى C,D+ الموضع : - B
٤٠٥ من ساعتها : ساعتها B,C,D

to suck he should rinse his mouth with boiled wine. He should hold
 oil in his mouth during the time of sucking. After this he should take
 a glass, light a wick [with fire] and put the burning wick inside.
 Thereupon the glass should be placed upside down on the wound
 and held there for a while. For this glass replaces a cupping glass and
 395 attracts the poison from inside the limbs to their outside. He should
 then make an incision in the swollen place and suck until he extracts
 healthy blood. For together with that blood the poison comes out as
 well, God willing. After that he should dress the place of the sting
 or bite with hot drugs which have a strong power of attraction, such
 as ashes of sulfur³⁰⁹, ashes of fig leaves³¹⁰, bread crumbs, pounded
 onion³¹¹, leek³¹² or the tail of a sheep; he must mix this with pound-
 400 ed salt³¹³ and cook it with garum³¹⁴ or with vinegar³¹⁵ or with both.
 [With this he should dress the wound]. If he dresses the place of the
 sting or bite with humid bitumen³¹⁶, it is clearly beneficial. He
 should also plaster the wound with vinegar³¹⁷, in which mountain
 mint³¹⁸ and origan³¹⁹ have been cooked, or with seawater³²⁰ or
 with salt water. For these things attract whatever poison and drive
 it away, God willing. It is necessary as well to dress³²¹ the place (of
 405 the sting or bite) with young pigeons or chicken, which must be
 slaughtered at that moment and put on the limb while (still) warm.

فانها تجذب السمّ وتسكن الوجع. وينبغي ان يضمّد الموضع ايضا
 بالاضمدة المركبة المعمولة بفاقلة الطيب وبالاشياء العطرية القوية
 الرائحة. وينبغي ان يسقي الملسوع، ايّ شيء لسعه من الهوامّ
 من ذوات السموم، من جوز الينبوت او قفر اليهود، من كلّ واحد
 ٤١٠ وزن درهم بشراب او ماء الحشيشة التي تسمّى بالروس وهي غيرا
 ذكر، يعصر ويسقى من ماءها قدر اوقيتين. ودم السلحفاة البحرية من
 الادوية القوية في دفع السموم وتسكين الوجع، وكذلك الجندبادستر
 واصل القثا وماء الكراث والحشيشة المعروفة بخصى الثعلب والفنجنكشت
 والزراوند وحبّ الغار والسراطين النهرية مشوية او مطبوخة. هذه الادوية
 ٤١٥ كلّها تعمل في دفع السمّ وتسكين الوجع عملا صالحا. ومن الادوية المركبة
 الترياق الاعظم اذا شرب نفع من لسع جميع الهوامّ، ولكن يحتاج ان
 يبادر به قبل وصول السمّ الى الاعضاء لان فعله تقوية الاعضاء على
 ان لا تقبل آفة السمّ وتدفعها. وتنفع ايضا الاشياء التي تولد العرق
 وتخرج الفضول من البدن. ويستعمل هذا الدواء فانه كثير المنفعة

٤٠٧ الاضمدة : الاضمّد C القوية : القرية C ٤٠٨ يسقى : يشفي D ايّ شيء
 لسعه من الهوامّ : ايّ حيوان كان B,C ، ايّ حيوان كان لسعه D ٤٠٩
 ذوات : دارب C السموم : السمّ B,C,D ، ومن جوز الرّدا او B+ ينبوت :
 خرنوب نبطي A i.m. ، يلبوت C ، سرر D قفر اليهود : او خمر وهو قفر
 (قصر B,C) اليهود B,C,D ٤١٠ او : من B,C,D+ بالروس : باليوس A ،
 ورش B,C ، ورس D غيرا ذكر : سنجدات؟ A i.m. ، غير ذكر B ٤١٣
 خصى : خصا A ٤١٤ زراوند : راوند B,C غار : فار D نهريّة : بحريّة B
 مشوية او مطبوخة : B inv. ٤١٥ السمّ : السموم B ٤١٦ ان يبادر :
 الى تبادر D ٤١٧ به : - C لان فعله تقوية الاعضاء : B,C,D - ٤١٨
 تقبل : تقتل B وتدفعها : - B,C ، ووجدت في نسخة اخرى في هذا
 الموضع : وقد ينفع من لسع الهوامّ فصد العرق ولا سيّما اذا كان
 الملسوع شابا ممثليّ البدن A+ وتنفع ايضا : وقد ينفع ايضا من لسع
 الهوامّ استعمال B,C,D ٤١٩ وتخرج : - C ويستعمل : ايضا B,C,D+

For they attract the poison and allay the pain. Compound dressings, which are prepared from fragrant cardamon³²² and from other spices with a strong aroma, should be applied as well. The one who has been stung or bitten by any vermin must be given to drink from
 410 the poisons themselves³²³: one dirham each of the nut of Nabataean carob³²⁴ or bitumen³²⁵ with the syrup or extract of the herb called “sumac”³²⁶, which is the male species of sorb³²⁷. Two ūqīyas³²⁸ should be expressed and given to him to drink. The blood of a sea turtle³²⁹ is one of the strong drugs to repel poisons and to allay the pain; the same applies to castor³³⁰, root of cucumber³³¹, extract of leek³³², the herb known as lizard orchis³³³, chaste tree³³⁴, birth wort³³⁵, “laurel nut”³³⁶, and river crab³³⁷, roasted or cooked. All
 415 these remedies are effective in repelling poison and allaying pain. Of the compound drugs, when one drinks the theriaca magna³³⁸, it is useful against all vermin. It is, however, necessary to drink it before the poison has reached the limbs. For it is active in strengthening the limbs so that they will not be harmed by the poison, but will repel it*. Also useful are those drugs which cause sweat and expel the fluid from the body. One can also apply the (following) drug, for

٤٢٠ في لسع الحيات والعقارب وجميع الهوام، اخلاطه: يؤخذ من السكينج واصل السوسن الاسمانجوني والزنجبيل من كلّ واحد وزن اربعة دراهم ومن الزراوند وزن خمسة دراهم ومن السذاب والغارقون من كلّ واحد وزن ثلاثة دراهم ومن دقيق الكرسة وزن درهم، يدقّ ذلك اجمع وينخل ويتخذ منه اقراص وزن كلّ قرص اربعة دوانيق ويشرب في وقت الحاجة بشراب او ببعض الاشربة المتخذة من الفواكه

باب او بماء فاتر. الباب الثالث عشر عماذا يتولّد العرق المدني وبماذا يتحرّز من تولّده. ومن اجل ان العرق المدني يتولّد كثيرا في ذلك الصقع، اعني المدينة، حتى صار يعرف بالمدني، رايت ان اصف التدبير الذي يتحرّز به منه. فاقول ان تولّد هذا العرق يكون في اللحم كتولّد الحيات وحبّ القرع واصناف الدود في البطن وكتولّد سائر الاشياء التي تدبّ على الارض. والعلّة التي تشتمل على هذه الاشياء جميعا في تولّدها العفونة المعتدلة. وكما ان ما يعفن في جميع الاجسام يولد حيوانا كذلك العفن في اللحم يكون منه تولّد هذا العرق. وكلّ تعفّن

٤٢١ الاسمانجوني : نجوني B ، يعني اسمان كون A i.m. من كلّ واحد : B,C,D- وزن : درهم A ٤٢٢ الزاروند : الازرق B,C,D- وزن : درهم A ٤٢٣ غارقون : غاريقون D ٤٢٤ اربعة : اربع A ٤٢٥ بشراب : في نسخة اخرى A+ ٤٢٦ فاتر : حارّ B,C,D ، ان شاء الله ، في نسخة اخرى قد ينفع من لسع الهوام فصد العرق لا سيّما اذا كان الملسوع شابّا ممتلئ البدن B,C,D+ عماذا : عما B ، في ما C مدني : مدني D بماذا : عماذا A ٤٢٧ مدني : مدني D ٤٢٨ صقع : موضع C اعني المدينة : B,C,D- بالمدني : باسمه اعني بالمدينة B,C,D اصف : اصف C ، اصف C i.m. ٤٢٩ يكون B,C,D- ٤٣١ على الارض : في الارض A ، منها D+ تشتمل : تشتمل B,D على : B,C,D- جميعا : B,C,D- ٤٣٢ تولّدها : توليدها B,C كما : -C ما : كلما B في : -B,C ٤٣٣ حيوانا : ما B,C,D+ العفن : المعفن B ، العفين C منه : منها B ، D- هذا العرق : هذه العروق C تعفّن : بعض C

420 it is very useful against bites of snakes, stings of scorpions and of all vermin; its composition is: one must take four dirhams each of sagapenum³⁴⁰, root of German iris³⁴¹ and ginger³⁴², five dirhams of birth-wort³⁴³, three dirhams each of rue³⁴⁴ and agaric³⁴⁵ and one dirham of the flour of bitter vetch³⁴⁶; all this must be pounded and
 425 filtered. Thereupon pastilles³⁴⁷ should be prepared of it, each weighing four dāniqs³⁴⁸. One should take this in case of need with a syrup (from plants) or with a syrup prepared from fruit or with lukewarm water.

Chapter 13: On the origin of the *dracunculus medinensis*³⁴⁹ and on the prophylaxis against its occurrence. Since the *dracunculus medinensis* so often originates in that place, I mean al-Madīna, so that it is known as *medinensis*, I thought (it a good thing) to describe the regimen which must be the prophylaxis against it. What I want to say is that
 430 this worm originates³⁵⁰ in the flesh in the same way as worms³⁵¹, tapeworms³⁵² and (other) kinds of worms originate in the belly, and everything that crawls upon the earth. For all of them occur by way of a common cause: The balanced putrefaction³⁵³. As putrefaction in the different kinds of matter causes animals, so putrefaction in the flesh causes this worm. Every putrefaction³⁵⁴ is caused by the com-

فانما يكون باجتماع حرارة ورطوبة باقساط معلومة، وتلك الاقساط ليس
 ٤٣٥ يدركها البشر ولا يعلم مقاديرها الا البارئ جلّ وعزّ. على انها
 ليست محصورة حصرا لا يلزم فيها زيادة ولا نقصان، لكنها مختلفة
 واختلافها على قدر اختلاف الحيوان المتولّد منها. فان الاقساط من
 الحرارة والرطوبة التي تتولّد منها الحيات في البطن خلاف الاقساط
 التي يتولّد منها حبّ القرع وخلاف الاقساط التي يتولّد عنها القمل
 ٤٤٠ والبراغيث والبقّ والجرجس. وكذلك «الاقساط» التي يتولّد عنها من
 الارض الضبّ واليربوع والجردون خلاف الاقساط التي تتولّد عنها الحيات
 والعقارب وبنات وردان. وقد يختلف تولّد هذه الحيوانات في البلدان
 على قدر اختلاف ترب البلدان، فان كلّ بلد تخصّه تربة يتولّد فيها
 من هذه الحيوانات خلاف الحيوانات التي تتولّد في التربة الاخرى.
 ٤٤٥ فالارض الخصبة يتولّد فيها من الحيوانات خلاف ما يتولّد في الارض
 الرمادية، والارض الحمراء التربة يتولّد فيها حيوان غير الحيوانات التي
 تتولّد في الارض السوداء. اذا كان التعقّن في كلّ واحدة من الترب

٤٣٤ باجتماع : منه A رطوبة : ما C + ٣٥ جلّ وعزّ : سبحانه
 وجلّ ثناؤه B,D، تعالى C ٣٨ الحرارة : الخلافة C والرطوبة التي
 تتولّد منها الحيات: A - ٣٩ منها : عنها B,C,D حبّ : حبات D خلاف : ان D
 ٤٤٠ والبقّ : - D ٤٤١ الضبّ : الضبّ ق. A i.m. جردون : جردان B,D والجردون
 ... الحيات : - C ٤٤٢ وقد تختلف : وعلى هذا القياس تختلف B,C,D ، تولّد : - D
 ٤٤٣ ترب : تراب B تخصّه : قد تخصّه B,C,D ٤٤٥ فالارض : والارض B,C,D
 ٤٤٦ والارض : وفي الارض D الحيوانات : الحيوان D ٤٤٧ واحدة : واحد A,B,D

435 bination of heat and moisture in certain quantities. No mortal being, however, can grasp these quantities and no one can know their measures, except the Creator, to Whom belong glory and greatness. For these quantities are not subject to limitation, neither increase nor decrease adheres to them. They³⁵⁵ are, however, liable to difference and this difference is analogous to that of the animals which originate from them. For the quantities of heat and moisture from which worms in the belly originate differ from those from
440 which tapeworms originate and from those from which ticks, fleas, gnats and bugs³⁵⁶ originate. Just as the quantities from which lizards³⁵⁷, jerboas and rats are born from the earth differ from the quantities from which snakes, scorpions and cockroaches are born. And different animals³⁵⁸ are born in (different) countries analogous to the different (kinds) of soil of those countries. For every country is distinguished by its own (kind) of soil, from which animals are born which are different from those born in another (kind) of soil.
445 The animals born in fertile soil, for instance, are different from those born in ashy soil, and the animals born in red soil differ from those born in black soil. If there is putrefaction in one kind of soil, its

يكون في مقادير مختلفة مخالفة للمقادير التي يكون منها الحيوان من غير تلك التربة. ولهذه العلة صار يتولّد في كلّ بلد جنس من الحيوان ٤٥٠ مخالف للجنس الذي يتولّد في البلد الآخر حتى صار بعض البلدان لا يتولّد فيه عقرب البتّة وبعضها لا يتولّد فيه براغيث وبعضها لا يتولّد فيه بقّ. ومن هذه الجهة صار العرق المدني يتولّد بالمدينة وما يليها في اكثر الامر دون سائر المواضع. والسبب في ذلك ان هواء ذلك الصقع مع الاغذية التي توجد فيه كثيرا فيغتذي بها الناس كالتمور ٤٥٥ فيه يتولّد ذلك العرق في اللحم فيصير حيوانا كسائر الحيوان الذي يتولّد في البطن والامعاء. والتحرّز من تولّده ان يترك اكل التمور البتّة والتوقّي من استعمال الاغذية التي يسرع اليها الفساد والاستحالة كالالبان وما يعمل منها مثل الجبن والمصل وما شابه ذلك وبادمان دخول الحّمّام واستعمال صبّ الماء الحارّ على البدن، ان كان ذلك البلد لا حمّامات فيه، ٤٦٠ وشرب السكنجبين كثيرا قبل الطعام واخذ اطريفل الاهليج الاصفر في الايام والهليج المرّبي والاملج المرّبي والشقاقل المرّبي والحبوب التي تنقي المعدة والامعاء مثل الحبّ المعروف بالشيار وحبّ الذهب

٤٤٨ للمقادير : التي تكون في التربة B,C,D + منها : فيها C ٤٥٠ الآخر : الاخرى A، البلدان الآخر C صار A i.m. : فيه : فيها B,C,D وبعضها ... براغيث : -D براغيث : وبعضها لا يتولّد فيها ذباب B,C + ٤٥٢ بالمدينة : في المدينة D ٤٥٣ في اكثر الامر : من اكثر الامراض B,C هواء : هو D ٤٥٤ : صقع : ناحية A i.m. التي : -B,C فيغتذي بها الناس : فيغتذيه كثير الناس B، فعتذى C التمور : جمع تمر A i.m. ٤٥٥ فيه : -B,C,D ٤٥٦ ان يترك : يكون بترك B,C,D اكل : -D البتّة : -B ٤٥٧ التي : -B ٤٥٨ مصل : بصل D ذلك : قراقرت است A s.l. (is curds) ٤٦٠ اطريفل الاهليج الاصفر : الاطريفل الاصفر A,B,C,D ٤٦١ الايام : ايام B,C,D املج : ابلج D شقاقل : ثناقل A ٤٦٢ المعدة : في المعدة C شيار : مسار B,D ، مسان C

measures are different from those from which animals are born in another kind of soil. The species³⁵⁹ of animals born in one country
 450 are therefore so different from the species born in another country that in some countries the (species) of scorpion, in other countries that of fleas and in still other countries that of bugs, does not occur. In this way the *dracunculus medinensis* is mostly born in al-Madīna, but not in other places. The reason³⁶⁰ for this is that the climate of that place and the kinds of food with which people feed themselves,
 455 such as dates, cause this worm to appear in the flesh and to become an animal like the other animals born in the stomach and intestines. One can protect oneself against its occurrence by:

1. totally giving up the eating of dates.
2. being careful not to use those kinds of food which deteriorate quickly, such as the different kinds of milk³⁶¹ and the products made of it, such as cheese³⁶², whey and the like.
3. taking a warm bath frequently or pouring warm water over one's body in that country where one cannot take a warm bath.
- 460 4. drinking much oxymel³⁶³ before taking food.
5. taking the electuary³⁶⁴ of yellow myrobalan³⁶⁵ in the daytime; the confection of chebulic myrobalan³⁶⁶, of emblic myrobalan³⁶⁷ and of secacul³⁶⁸.
6. taking pills³⁶⁹ which clean the stomach and intestines, such as the pill known as “*shabyār*”³⁷⁰, the pill of gold³⁷¹ and the pill of bdellium³⁷².

وحبّ المقل وسفوف الاهليج والرازيانج والسكر وما شابه ذلك، واستعمال
الكبر في الطبيخ واتخاذ البوارد منه، اعني من قضبانته وحبّه من انفع
الاشياء ٤٦٥ في التحرّز من هذه العلة. وكذلك الشبث والرازيانج والطرخشقون
والفوذنج النهري والفوذنج الجبلي والسذاب والننع وجميع البقول التي
معها تفتيح لمنافس البدن وانضاج الاخلاط وتعديلها لثلا تلحج في
عضو من اعضاء البدن فيتعقّن فيه. بهذا التدبير وما شابهه يكون
التحرّز من العرق المدني ان شاء الله. الباب الرابع عشر في وصف
٤٧٠ علاج العرق المدني اذا تولّد في البدن. ولان العلم بما ينتفع به،
وان لم تدع اليه الحاجة الشديدة، حسن محمود رايت ان اصف العلاج
من العرق المدني، وان كان بقراط وجالينوس لم يذكره. واني اقول
فيه ما قال سورانوس ولاونيدوس وهما إمامان من ائمة الاطباء. فاما
سورانوس فانه لم ير ان هذا العرق حيوان وانه يتحرّك بل رأى انه
٤٧٥ يتوهّم انه متحرّك وهو بالحقيقة غير متحرّك. فاما لاونيدوس وغيره ممن اتى
بعده فانهم رأوا انه حيوان يتولّد في لحم العضل واكثر تولّده يكون

٤٦٤ الكبر : وجنسه D + ٤٦٥ شبث - C، ست D * الطرخشقون : الطرخشقون
A، الطريقون وهو الهندباء البري B، طرخشقوق وهو الهندباء البري
C, D، طرخشقون C i.m. ٤٦٦ فوذنج : فوتنج B, C, D ننع : نناع B ٤٦٧
معها : فيها B منافس : منافع B, C, D، منافذ B s.l. الاخلاط : وتنفيذه B, C, D +
٤٦٨ يكون : منه B + ٤٦٩ ان شاء الله : B, C, D - ٤٧٠ علاج : من
B, C + ٤٧١ رايت : ورايت A ٤٧٢ يذكره : يذكره C، وجدت في نسخة
اخرى زيادة في هذا الموضوع ولا اعرف غيرهما من الاطباء اليونانيين
ذكره الا سورانوس A + واني : وانا B, C, D ٤٧٣ قال : قاله B, C, D سورانوس :
مورانوس D لاونيدوس : الاونيدس B، لايندس C، لاون بندوس D ٤٧٤
سورانوس : مورانوس D ان : B, D - ٤٧٥ يتوهّم : يحسه A i.m. متحرّك : يتحرّك
B, C, D بالحقيقة : في الحقيقة B لاونيدوس : الاونيدوس A، الاونيدوس B،
لايندس C، لاونيدوس D ٤٧٦ في : من B, C عضل : فصر C يكون - B

7. taking the powder³⁷³ of chebulic myrobalan³⁷⁴, fennel³⁷⁵, sugar³⁷⁶ and the like.

8. using the caper plant³⁷⁷ for a decoction³⁷⁸.

Preparing collyria³⁷⁹ from the stalk and fruit of the caper plant³⁸⁰ is
 465 one of the most useful remedies against this disease. The same applies to dill³⁸¹, fennel³⁸², dandelion³⁸³, water mint³⁸⁴, mountain mint³⁸⁵, rue³⁸⁶, peppermint³⁸⁷ and all the vegetables. They open the pores of the body, boil³⁸⁸ its humours and bring them into a state³⁸⁹ of balance so they neither get stuck nor cause putrefaction in any member of the body. By this regimen and what resembles it one can protect oneself against the *dracunculus medinensis*, God willing.

Chapter 14: On [the description of] the treatment of the *dracunculus*
 470 *medinensis* once it has appeared in the stomach. It is good and praiseworthy to have some knowledge of what is useful against it, even if there is no urgent need for it. I therefore thought (it a good thing) to give this description of the treatment of the *dracunculus medinensis*, even if Hippocrates and Galen³⁹⁰ do not mention it. I want to quote the opinion of Soranus³⁹¹ and Leonidas³⁹², two exemplary physicians. Soranus³⁹³ thought that this worm is not an
 475 animal and that it does not move; it only seems to move, but does not move in reality. Leonidas and other physicians after him thought that it is an animal which originates in the flesh³⁹⁴ of the muscles, mostly in the forearms and upper arms, in the legs and

في السواعد والاعضاء والسوق والافخاذ. فاما الصبيان فانه يتولد مع ذلك ايضا منهم في الظهر والصدر تحت الجلد. وقد اتفق كلهم في علاجه على انه ينبغي ان ينطل العضو الذي ظهر فيه بالماء الحار نطلا دائما حتى يخرج طرفه، فاذا خرج يسلا سلا رقيقا، وان لم يجب الخروج شد في طرفه رصاصة بخيط وترك لتجذبه الرصاصة بثقلها فتحطه الى اسفل وتسله شيئا شيئا. ويستعمل مع ذلك ايضا اقعاد العليل في الماء الحار ويضمدم الموضع بالاضمدة المحللة كالضماد المتخذ من دقيق الشعير ودقيق الحنطة والحلبة وتين وبابونج وما اشبه ذلك. ويلزق عليه لزوقات محللة كاللزوق المنسوب الى الغار والى الطرفاء وغير ذلك مما شابهه. فان انقطع العرق المدني وتفتح موضعه شق عنه وعولج كما يعالج سائر الجراحات. وقد اتيت على ما يحتاج الى وصفه من علاج العرق المدني وسلكت في ذلك المسلك الذي سلكته في سائر هذا الكتاب. فاني قد وصفت فيه اشياء كثيرة فانا ارى ان الله عز وجل بمنه وطوله وسعة رحمته سيغنيك بالعافية فلا تحتاج الى استعمال شيء

٤٧٧ سواعد : مواعد C اعضاء : اعضا C,D والسوق : دون السوق A سوق : جمع : ساق A i.m. افخاذ : فخذ A i.m. فاما : في B,C,D + ٤٧٩ على : B - ينطل : يتطلى D ٤٨٠ نطلا : طلا D يسلا : سل B,C,D يجب : الى B,C + ٤٨١ خيط : خيط B ترك : تركه B,C ، تركت D تجذبه : تجذب به B فتحطه : - C ، فيحط D ٤٨٢ شيئا شيئا : شيئا C ، شيئا فشيئا D ايضا : B - ٤٨٣ ضماد : ضمدم B المحللة : به C + ٤٨٤ والحلبة : شنبليلة است C + A i.m. يلزق : يوضع D ٤٨٦ المدني : B,C,D تفتح : نفخ D كما : به C + ٤٨٩ عز وجل : جل جلاله وعز B ، جل جلاله C ٤٩٠ بمنه وطوله وسعة رحمته : وطوله وسعته ورحمته C سيغنيك : يشفيك C استعمال : - D

thighs. As for boys it also originates in the back and chest under the
 skin. All these physicians agree concerning its treatment that one
 should constantly foment³⁹⁵ the limb in which the worm appears
 480 with warm water until its end comes out. And when it comes out one
 should softly pull it. But³⁹⁶ if it does not want to come out completely,
 one should tie a piece of lead with a thread to its end. Then one
 should leave it alone so the piece of lead can pull it out by its weight
 little by little. Besides one should make the patient sit in warm water
 and bind the area affected with dissolving dressings³⁹⁷ such as the
 one prepared from flour of barley³⁹⁸, flour of wheat³⁹⁹, fenu-
 greek⁴⁰⁰, figs⁴⁰¹, camomile⁴⁰² and the like. One should also stick
 485 dissolving plasters⁴⁰³ on the wound, such as the one named after the
 laurel⁴⁰⁴, the tamarisk⁴⁰⁵ and other, similar ones. If⁴⁰⁶, however,
 the *dracunculus medinensis* breaks off and the place is open, the rest
 should be taken out and the wound should be treated as other
 wounds. I have come to the end of what was necessary to say about
 the treatment of the *dracunculus medinensis*, for which I used the same
 method as for the rest of my treatise. I have described many things
 490 and know that God, to Whom belong greatness and glory, will in
 His grace, beneficence and abundant mercy grant you good health,
 so that you will not need anything of it. Although I assume that

منها، على اني مع ذلك قد رجعت الى ان مثلك ايّك الله لا تخرج الى مثل هذا السفر بل ولا الى اقرب منه من المواضع، بعد ان يقع عليه اسم سفر، إلا في جمع وعدد كثير من الناس. وحيث كان الجمع والعدد الكثير فإنه لا يخلو من الآفات. والله أسأل ان يتفصّل عليك وعليّنا فيك وعلى جميع من معك بالسعادة التي هي سلامة النفس وصحة البدن، إنه على ما يشاء قدير. تمّت الرسالة المنسوبة الى قسطا بن لوقا في تدبير الابدان في السفر في شهر جمادى الاول من سنة سبع وتسعين بعد الالف من الهجرة على يدي العبد الاقل محمد شفيع الكرمانى غفر الله له ولوالديه.

٤٩١ اني : ان C ايّك الله - B,C,D : ٤٩٢ الى اقرب : اقرب A
 ٤٩٤ فانه لا يخلو : فانهم لا يخلون B,C,D من الآفات : من بعض
 الاسباب التي ذكرناها والاولى بمثلك (لمثلك C,D) معرفة (تعرفه C)
 هذه العلاجات والاستظهار بهذه الادوية والاشربة B,C,D+ والله :
 واله C أسأل : أسأل A,C,D ٤٩٥ فيك : بك C السعادة : السلامة C ، الكاملة D+
 هي : صحة B+ ٤٩٦ ما يشاء : كل شيء C تمّت ... ولوالديه : -C,D ،
 قد تمّ كتاب قسطا بن لوقا اليوناني لابي محمد الحسن بن مخلد فيما عمله في تدبير يده في سفره
 الى الحج بيد الفقير الى الله محمد بن الحسن بن علي بن الحسين الخراساني غفر الله له ولوالديه
 في داريهما لمحمد واله الطاهرين صل الله عليهم اجمعين في يوم الاحد ثاني عشر جمادى الثانية
 في سنة ٩١٣٠٢ B

someone like you, may God strengthen you, will only undertake
 such a journey as this one, even to places which are nearer to which
 the name journey still applies, in the company of many people. And
 such a company⁴⁰⁷ is not free of diseases. I ask God to favour you
 495 and us through you and everyone in your company with happiness,
 which consists of peace of mind and health of the body. Indeed God
 is almighty. Here ends the treatise ascribed⁴⁰⁸ to Qusṭā Ibn Lūqā on
 the regimen during the journey (to Mecca), in the month Jumādā I,
 in the year 1097 H., by the hands of the most humble servant Mu-
 hammad Shafīʿ al-Kirmānī, may God forgive him and his parents.

III. COMMENTARY

- 1 Al-Ḥasan b. Maḥlad: Qusṭā is referring to Abū Muḥammad al-Ḥasan b. Maḥlad b. al-Jarrāḥ; a secretary of Christian origin, who served the caliph al-Mutawakkil and became vizier under al-Muṭamid, for the first time in 877, then in 878–879; see E.I.² III, p. 859 *s.v.* Ibn Maḥlad; Sourdél, *Vizirat* II, p. 766 *s.v.* al-Ḥasan b. Maḥlad; Sourdél (*o.c.*, p. 573) mentions frequent meetings of scientists and physicians like Qusṭā with secretaries and viziers like al-Ḥasan b. Maḥlad.
- 2 Abū al-Ḥasan ʿUbayd Allāh b. Yaḥyā: Qusṭā is referring to ʿUbayd Allāh b. Yaḥyā b. Ḥāqān; he served as a vizier under al-Mutawakkil from 851 until the latter's assassination in 861, and under al-Muṭamid from 870 until 877; see E.I.² III, p. 824 *s.v.* Ibn Khāḳān; Sourdél, *Vizirat* II, p. 785 *s.v.* ʿUbayd Allāh b. Yaḥyā; according to Sourdél (*o.c.* p. 314) al-Ḥasan b. Maḥlad had served as his secretary.
- 3 Though Christians in general were not admitted to Mecca, we know from literary sources that in some cases physicians, because of their profession, were allowed to accompany their lords (see Tritton, *The Caliphs*, p. 155).
- 4 For a survey of the literary genre of health guides for the traveller see introduction. This commentary will take issue with the following authors as far as their discussion is relevant to Qusṭā's treatment of the subject: of the ancient authors Diocles, Oribasius and Paul of Aegina; of the Arab authors aṭ-Ṭabarī, ar-Rāzī, Pseudo Thābit Ibn Qurra and Ibn Sīnā. Ibn al-Jazzār's monograph, which is still in manuscript, will only be referred to as far as the headings of its different chapters are the same as those of Qusṭā's *Risāla*.
- 5 Qusṭā is the only author who, as far as can be established, devoted a monograph to the regimen during the *hajj*.
- 6 This disease has not been treated by Qusṭā in this treatise; There seems to be no particular reason for this omission. Nor is it discussed in the traveller's *regimina* mentioned in note 3.

Chapter 1

- 7 The theme of the regimen during a journey is part of the broader concept of hygiene or dietetics in general. The ancient doctors treated this concept at length (see Edelstein, *Ancient medicine*, pp. 303–316). In their opinion, dietetics as the right rule of living not only applies to the “natural” things, such as the humours or *pneumata* of the human body, but also to “unnatural” things. The Corpus Hippocraticum refers to six of these, which are known as the *sex res non naturales*, to wit:
 1. The air around us; 2. Movement and rest; 3. Eating and drinking;
 4. Sleeping and waking; 5. Natural excretion and retention (including bathing and coitus); 6. The soul's moods (see Schipperges, *Arabische Medizin*, pp. 52–62; Ullmann, *Medicine*, ch. 7).

Through translations into Syriac and Arabic, the works of these ancient doctors had an enormous influence on Arab medical authors. Hippocrates' treatise on hygiene, lost in Greek, is cited by ar-Rāzī and al-Majūsī (Ullmann, *Medizin*, p. 32); Galen's *De sanitate tuenda* (Kühn VI, pp. 1–452;

Koch pp. 1–198), treating the same subject, was translated into Arabic and cited by many authors (Ullmann *o.c.*, p. 46).

The theme of dietetics became so popular that it developed into an independent literary genre in Arabic medical literature, whereby the six points referred to kept their central position (see Ullmann, *o.c.*, pp. 190–2).

Qusṭā also devoted a monograph to this subject, entitled: *K. fi ḥifẓ aṣ-ṣiḥḥa wa-izālat al-maraḍ* (see Ullmann *o.c.*, *l.c.*).

Apart from the Greek influence, the concept of hygiene as developed in the Koran and Ḥadīth was another element which gave form to the concept of *tadbīr aṣ-ṣiḥḥa* (*regimen sanitatis*) in Arabic medical literature. Through translations into Latin, this idea was to have a profound influence on the scholastic concept of *regimen sanitatis* (see Schipperges *o.c.*, *l.c.*).

- 8 This general advice concerning times of travelling is almost self-evident for a region with such a hot climate as the Arabian Peninsula. Burton, *Personal Narrative of a Pilgrimage to Mecca* II, pp. 272, 275 mentions regular journeys during the night.
 - 9 Diocles, Oribasius and Paul (see note 4) recommend that the traveller covers his hips until the sides with a soft piece of cloth during the summer.
 - 10 See for a similar statement the traveller's *regimina* of ar-Rāzī p. 218, Pseudo Thābit p. 349 and Ibn Sīnā p. 183. For a more general advice to eat only after physical exercise see Hippocrates (Ἐπιδημῖαι, IV, 23; Littré V, p. 315): "Que les exercices précèdent les aliments." Galen, *De sanitate tuenda* II, 2 (Kühn VI, p. 84; Koch p. 39), states his approval of this advice. Galen, *De bonis malisque siccis* 3 (Kühn VI, p. 764; Koch p. 397), gives a detailed account of why bodily movement after taking food is harmful; cf. Oribasius, *Coll. Med.* VI, 12 (derived from Galen).
 - 11 Meal: Lane p. 1472 *sawīq*: "meal of parched barley or of the species thereof, or similar grain, called *sult*; it is generally made into a kind of gruel, or thick ptisan, being moistened with water, or clarified butter"; al-Bīrūnī p. 196, no. 65; for a detailed description of the different sorts of *sawīq* see Ibn al-Bayṭār III, p. 45.
 - 12 Barley: Freytag I, p. 338 *sult*: "Hordeum, aliis Hordei species corticis expers vel tritici species hordeo similis"; al-Bīrūnī p. 188, no. 37: "It is said to be the sour barley which we call *wārah*. I, however, read in books that it is a medicine which resembles barley"; Maimonides no. 270: "A kind of grain which resembles barley very much"; Diosc. *Triumphans* II, 77: "Es handelt sich also um enthülste, beim Drusch aus den Schalen gelöste Gerstenkörner." For barley see as well Hippocrates, Περὶ διαίτης II, 40 (Littré VI, pp. 536–8); Diosc. Wellmann II, 93/Berendes II, 108.
- As for the traveller's *regimina*, Diocles, Oribasius and Paul refer to ἄλφιτον (barley-groats; Liddell & Scott p. 74) taken with salt in water as a remedy for thirst; aṭ-Ṭabarī p. 110 recommends the use of meal and cold water during hot weather; Ibn Sīnā p. 184 advises taking meal of barley and fruit before starting the journey as a prophylaxis against thirst; ar-Rāzī p. 214 recommends that the traveller use meal of barley during the summer.
- 13 Biscuits: WKAS I, p. 234 *kaḥkun*: "something baked (rusk, biscuit, or the like)."
 - 14 Sugar: Schmucker no. 391 *sukkar*: "saccharum, Zucker"; al-Bīrūnī p. 185,

- no. 29; Diosc. Wellmann II, 82/Berendes II, 104; Diosc. Triumphans II, 65.
- 15 Syrup: Ullmann, *Medizin*, p. 298 *sharāb*: “Trank, Getränk”; al-Qalānisī p. 269: “1. Sirup, Arzneitränk; 2. Wein.”
- 16 Peaches: Schmucker no. 283 *hawḥ*: “*Amygdalus persica* (Persica vulgaris) (Rosaceae), Pfirsich”; al-Bīrūnī p. 139, no. 12; Maimonides no. 397; Diosc. Wellmann I, 115/Berendes I, 164; Diosc. Triumphans I, 88.
- 17 Prunes: Schmucker no. 7 *ijjās*: “*Prunus domestica* L. (Rosaceae), Pflaume, Zwetsche”; al-Bīrūnī p. 17, no. 16; Maimonides no. 13; Ibn al-Quff no. 2 *Pflaumen*: “Sie löschen Fieberbrand und Durst”; Diosc. Wellmann I, 121/Berendes I, 174; Diosc. Triumphans I, 97.
- 18 Rose-water syrup: Schmucker no. 200 *julāb*: “Ein zusammengesetztes Mittel, meist eine Zuckerabkochung, oft gesüßtes Rosenwasser”; al-Qalānisī p. 201.
- 19 Oxymel: Schmucker no. 395 *sikanjubīn*: “Oxymel, Sauerhonig”; al-Bīrūnī p. 186, no. 33; Diosc. Wellmann V. 14/Berendes V, 22.
- 20 Almonds: Schmucker no. 685 *lauz*: “Früchte von *Amygdalus communis* L. (Prunoideae der Rosaceae) var. amara (bittere Mandel) var. dulcis (süsse Mandel)”; al-Bīrūnī p. 294, no. 19; Diosc. Wellmann I, 123/Berendes I, 176; Diosc. Triumphans I, 99, 100.
- 21 While Qusṭā states that the traveler may have sexual intercourse when he has recovered a little bit from his fatigue, the traveller’s regimen of aṭ-Ṭabarī (p. 110) does not permit sexual intercourse at all during the summer. Ar-Rāzī (p. 217) does not permit it during extremely hot weather and Ibn Sīnā (p. 184) forbids it when suffering from a *samūm*.

Qusṭā expresses the same advice in his *K. fī al-bāh wa mā yuḥtāju ilayhi min tadbīr al-badan fī istiṣṣālīhi* (ed. Haydar p. 28); this may be clear from the next comparison:

رسالة في تدبير سفر الحج:	كتاب في الباه:
فان احتاج الى استعمال الباه كان	وذموا (كثير من الاطباء) ايضا
استعماله ذلك بعد الراحة اليسيرة	استعماله بعقب التعب الكثير لما
من تعب حركة المسير.	يتحلل من البدن من التعب وحاجة
	البدن السكون والراحة بعده لا الى
	الزيادة في الحركة والتعب.

Translation:

Risāla fī tadbīr safar al-ḥajj:

If he wants to have sexual intercourse, he can do so after he has recovered a little bit from the fatigue caused by the [movement of] the journey.

Kitāb fī al-bāh:

Ebenso raten sie (viele Aerzte) von deren Ausübung nach grosser Anstrengung ab, weil sich bei der Anstrengung vom Körper (Pneuma) löst. Der Körper bedarf nach der Ruhe und keine weitere Bewegung und Anstrengung (Transl. Haydar).

The theme of sexual intercourse, a recurrent topic in ancient literature on hygiene as part of the *sex res non naturales* (see note 7), became very popular

amongst Arab doctors. Many of them treated the subject in one or more monographs, thereby establishing a special literary genre; see Ullmann, *Medizin*, pp. 193–8.

Besides the aforementioned monograph, Qusṭā composed a second one devoted to it entitled: *K. fī al-bāh* (ed. Najdat Ali Barhoum). The idea underlying this literary genre was that sexual continence was injurious to health (see Ullmann *o.c.*, *l.c.*).

- 22 Viands: Vullers I, p. 235 *bazmāward*: “genus cibi e carne cocta, oleribus et ovis constans, frusto panis involutum et in globulos s. offas formatum, quod in partes concisum edunt.” For the use of the different kinds of meat see notes 32 and 33.
- 23 Roasted meat: WKAS I, p. 123 *kardanāj*: “meat roasted on the spit.”
- 24 Oils: Ullmann, *Medizin* p. 297 *duhn*, Plur. *adhān*: “Öl, öartiger Extrakt.”
- 25 Oil of roses: Schmucker no. 797 *ward*: “viell. Rosa centifolia L. (Rosaceae), Rose”; az-Zahrāwī pp. 105–6; Flora III, pp. 198–200; Diosc. Wellmann I, 99/Berendes I, 130; Diosc. Triumphans I, 68.
- 26 Oil of myrtle: Schmucker no. 19 *ās*: “Myrtus communis L., Myrte”; az-Zahrāwī pp. 106–7; al-Bīrūnī p. 22, no. 36; Diosc. Wellmann I, 39/Berendes I, 48.

This advice to pour water over the body and to anoint it with different oils has a counterpart in the traveller’s regimen of aṭ-Ṭabarī (p. 110); he recommends that the traveller, when he halts during a journey in the summer, take a bath, wash himself with cold water and anoint himself with oil of roses or oil of violets. Diocles, Oribasius and Paul only recommend that the traveller anoint himself; ar-Rāzī (pp. 216–7) only advises one to wash oneself with cold water.

- 27 Bran: Schmucker no. 764 *nuḥāla*: “Kleie”; al-Bīrūnī p. 321, no. 15; Ibn al-Quff no. 244; Diosc. Wellmann II, 85/Berendes II, 107; Diosc. Triumphans II, 69.
- 28 *Naḍūḥ*: Schmucker no. 770 “Eine best. Parfümart”; Freytag II, p. 292: “Medicamentum quod ori inditur, species aromatis.”
- 29 Rose-water: See note 17.
- 30 Of this threefold advice by Qusṭā, consisting of rubbing, washing and eating, two elements are referred to by aṭ-Ṭabarī in his traveller’s regimen (p. 110), namely, washing and eating; Diocles, Oribasius, Paul and ar-Rāzī (p. 217) only mention the element of eating. The subject of rubbing is extensively treated by Qusṭā in ch. 3 of this treatise.
- 31 Balanced humours: See Ullmann, *Medicine* p. 57: “Everything that exists in the world of growth and decay has thus arisen out of the four elements, when they are mixed with one another in different amounts and unequal proportions. This relationship of mixing in organic bodies is called “temperament” (*krasis*, *mizāj*). A body in which the elements are equally present is called “balanced” or “even” (*muṭadil*). The same counts for the four humours from which all organs possessing blood were made; if they form a balanced mixture then there is health; if not, illness is the result”; see *o.c.* p. 60. Ullmann based this description of the humoral theory on the *K. al-Malakī* of al-Majūsī, who was an out-and-out Galenist (*o.c.* p. 55). Cf. Galen, *De humoribus* (Kühn XIX, p. 491): “Equality and symmetry of the humours effect health.”

- 32 Meat of one year old kids and lambs: Hippocrates (Περὶ διαίτης II, 46; Littré VI, p. 547 had already remarked that the meat of kids and lambs is very light because they have less blood and more moisture; Galen, *De alimentorum facultatibus* III, 18 (Kühn VI, p. 701; Helmreich p. 356), says that the meat of young animals is better than that of old ones; aṭ-Ṭabarī (p. 384) refers to meat of kids and lambs as the best when they are not too young; ar-Rāzī (XXI 2, p. 461) says that the meat of kids is less warm and moist than that of lambs, and that the meat of a yearling is especially good for someone with a hot and dry temperament, because it contains little heat and moisture; Ibn Sīnā (II, p. 358) mentions the meat of sheep as the best, namely, that of the young ones which is lighter to digest, while the meat of a kid is the lightest; Maimonides (*Fī bayān al-aʿrāḍ*, ch. 20b; *Hanhagat ha-Berīʿut*, ch. 1, no. 6) recommends the meat of a kid and one year old lamb.

Paul I, ch. 84, Oribasius, *Coll. Med.* I, 3 and Aetius II, 121 do not refer to this kind of meat.

- 33 Francolin: Lane p. 869 *durrāj*: “A certain bird, the attagen, francolin, heath-cock or rail”; Kopf (Abū Ḥayyān at-Tauḥīdī, *K. al-imtāʿ wa al-muʿānasa*, p. 164, no. 39) translates the *durrāj* as “francolin” as well; Kroner (Maimonides, *Fī bayān al-aʿrāḍ*, ch. 20) translates it as “Haselhuhn”; Leibowitz-Marcus, however, translate it in their edition of the same text as “francolin.” The meat of chickens and francolins is mentioned by several authors in connection with the fact that it digests very easily; Galen *o. c.* III, 18 (Kühn VI, pp. 700–1; Helmreich p. 356) mentions the meat of partridge, dove, cock, and hen; Oribasius (*Coll. Med.* II, 42) mentions that of partridge, francolin, dove, and cock; Aetius (II, 130) mentions the meat of partridge, francolin, dove, hen, and cock; Paul (I, ch. 82) refers to that of partridge, francolin, young dove, hen, and pheasant.

Aṭ-Ṭabarī (p. 385) says that the meat of chickens is most light, while that of francolins is most balanced (cf. Qusṭā); ar-Rāzī (XXI 2, p. 463) recommends the meat of partridge, chicken, hen, and ring-dove; Maimonides (*Fī bayān al-aʿrāḍ*, ch. 20b) recommends that of hen and rooster because it is good for corrupted humours; Maimonides (*Hanhagat ha-Berīʿut*, ch. 1, no. 6) refers to the meat of a hen, francolin or partridge.

Though not mentioning these birds explicitly, Hippocrates (Περὶ διαίτης II, 47; Littré VI, pp. 547–9) discusses the meat of several kinds of birds in connection with the degree of dryness. It should be obvious from the cited material that Qusṭā is not being innovative when recommending the meat of one year old kids and lambs and that of chickens and francolins. On the contrary, he joins a long tradition extending from Hippocrates to Maimonides as far as the present study is concerned. New, however, is his recommendation of these kinds of meat in a traveller’s regimen, since the other *regimina* mentioned in note 4 do not discuss them. Only Ibn Sīnā p. 183 mentions roasted liver and the like as a means of appeasing one’s hunger.

- 34 Pepper: Schmucker no. 538 *fulful*: “Piper nigrum L. (Piperaceae), Pfeffer”; al-Bīrūnī p. 253, no. 34; Diosc. Wellmann II, 159/Berendes II, 188; Diosc. Triumphans II, 143.
- 35 Caraway: WKAS I, p. 164 *karawyā*, *karāwiyyā*, *karawīya*: “caraway (Carum Carvi L.)”; Schmucker no. 625; Diosc. Wellmann III, 57/Berendes III, 59;

- Diosc. Triumphans III, 55.
- 36 Galangale: Schmucker no. 285 *ḥūlinjān*: “Alpinia galanga (Zingiberaceae), Galgant”; Maimonides no. 398.
- 37 Cinnamon: Schmucker no. 292 *dār šīnī*: “Rinde von Cinnamomum ceylanicum Nees., Cinnamomum cassia BL. u.a.”; al-Bīrūnī p. 156, no. 4; Diosc. Wellmann I, 14/Berendes I, 13; Diosc. Triumphans I, 11.
- 38 Parboiled meat: See note 23.
- 39 Poached egg: Vullers II, p. 1393 *nīm-birisht*: “ovum sorbile, semicoctum”; Kroner, *Zur Terminologie der arabischen Medizin*, p. 44: “halbgekochtes Ei”; Ibn Sīnā II, p. 271: “The best kind of egg and the most nutritious is the *nīm-birisht*; Ibn al-Quff no. 31: “Das beste Ei (d.i. das bekömmlichste) ist dasjenige, das man weichgekocht (*nīm-birisht*) verzehrt, und zwar bringt man Wasser zum Sieden, gibt das Ei hinein, zählt bis dreihundert und nimmt es heraus—dann ist es *nīm-birisht*.”

Eggs in general are treated by Hippocrates, *Περὶ διαίτης* II, 50 (Littré VI, pp. 552–4); Diosc. Wellmann II, 50/Berendes II, 54–55; Galen, *De alimentorum facultatibus* III, 21 (Kühn VI, pp. 706–7; Helmreich pp. 359–60); Oribasius, *Coll. Med.* II, 45; Aetius II, 134; Paul I, 83; Ibn Sīnā II, pp. 270–1; Ibn al-Baytār I, pp. 129–32; Diosc. Triumphans II, 37.

Maimonides (*Hanhagat ha-Beri'ut*, ch. 1, no. 6) recommends the yolk (cf. *muhḥ*, MS A) of an egg.

The same holds good with regard to Qusṭā's introduction of this kind of eggs as in the case of meat (note 32): New is not the recommendation, but the introduction.

Chapter 2

- 40 The subject of fatigue is part of the *sex res non naturales* treated in the literature on the *regimen sanitatis* as referred to in note 7. The traveller's regimen of ar-Rāzī p. 209 refers for its treatment to a special section (XXIII 1, pp. 171–209); the same holds good for Ibn Sīnā (I, pp. 172–4). A systematic discussion of this topic can be found in the works of ancient authors: Hippocrates, *Περὶ διαίτης* II, 66 (Littré VI, pp. 583–9); Theophrast (Wimmer pp. 398–401); Galen, *De sanitate tuenda* III, 5 (Kühn VI, p. 190 ff.; Koch p. 83 ff.), *Hippocratis aphorismi et Galeni in eis commentarii* (Kühn XVIIB, p. 459); Oribasius, *Synopsis* V, 15; Aetius IV, 35–39 and Paul I, ch. 20.

In Arabic medical literature it has been treated by, for instance, ar-Rāzī, al-Majūsī (vol. 2, part 1, ch. 4) and Ibn Sīnā.

- 41 Different kinds of fatigue as mentioned by Galen *o.c.* (Kühn XVIIB, p. 459): Qusṭā is not correct in his quotation of Galen, as the following comparison will show:

Galen	Qusṭā
1. ἐλκώδης (ulcerating)	مثقل
2. τονώδης (tightening)	ممدد
3. φλεγμονώδης (inflaming)	مسخن
4. –	مؤلم

For Qusṭā's explanation as to why he called the first kind "burdening" see 11. 86–88 and note 42. Theophrast p. 398, 1 uses this term as a characteristic of fatigue in general. About Qusṭā's terminology for the last two kinds attention should be paid to the following remarks:

1. The characteristic of the third kind as mentioned by Qusṭā, namely, the heating of the humours, is a precondition for the inflammation mentioned by Galen as a characteristic of this kind; cf. Galen's statement (*De sanitate tuenda* III, 5; Kühn VI, p. 193; Koch p. 85): "With the third kind of fatigue one has the feeling as if parts of the body are either beaten or inflamed; it occurs mostly when the muscles, *heated* beyond measure, attract something of the excretion around them."

2. Qusṭā's description of the fourth kind as the feeling of pain resulting from very warm humours is also part of Galen's description of the third kind; cf. Galen III, 7 (Koch p. 88): "The third kind of fatigue originates from heavy movements through which the muscles swell up in such an unnatural way that it looks very much a state of inflammation; these muscles get very warm and even the slightest touch or movement *hurts* them."

This leads us to the inevitable conclusion that Qusṭā does not describe four kinds of fatigue as mentioned by Galen, but only three, namely, ulcerating, tightening and inflaming. Galen's fourth kind is omitted by him altogether. Though this might seem strange at first sight, it is quite logical considering the fact that Galen himself concedes that this fourth kind is not really a state of fatigue; cf. Galen, *o.c.* (Kühn VI, p. 201; Koch p. 89): "There are as it were three states or dispositions or whatever you call them, of the body. Besides these there is a fourth one, which is, true enough, similar to fatigue but is not really fatigue. For it neither has the characteristic of an ulcer, a tension or an inflammation, nor that of terrible pain or slowness in moving. It only causes leanness and dryness."

It seems as if Qusṭā wanted to maintain the scheme of four kinds of fatigue by dividing the characteristics of the third kind into two independent kinds. Finally, it should be remarked that in addition to the three "simple" kinds of fatigue as cited by Qusṭā, Galen distinguishes four "composite" ones (*o.c.* III, 5; Kühn VI, p. 191; Koch p. 84), which Qusṭā does not mention at all. Oribasius *l.c.* and Paul *l.c.* mention the same kinds of fatigue as Galen, using the same terminology. Contrary to Galen, however, they also consider the fourth kind as a state of fatigue, since they omit Galen's reservation. Aetius IV, 35 mentions the same kinds as Galen with the same reservation to the fourth kind.

In contrast to Qusṭā, ar-Rāzī p. 171 ff. cites Galen correctly when calling the first kind of fatigue القروي (Galen ἐλκώδης); the second kind الامتدادي (Galen τονώδης); and the third kind الورمي (Galen φλεγμονώδης). He also refers to the fourth kind, saying that it is like fatigue.

Al-Majūsī *l.c.* and Ibn Sīnā *l.c.* use the same terminology as ar-Rāzī in their description of the different kinds of fatigue.

- 42 With regard to this explanation of the first kind of fatigue, cf. Galen (*o.c.* III, 5; Kühn VI, p. 192; Koch p. 85): "The ulcerating fatigue originates from an abundance of thin and at the same time sharp excretion," and Galen (*Hippocrates aphorismi et Galeni in eis commentarii*; Kühn XVIIIB, p. 459):

“The first kind arises from bad humours.”

Qusṭā mentions thin, sharp humours combined with a weak body as major causes, since they give the feeling of a “burden”.

Galen’s explanation is repeated by Oribasius *l.c.*; Aetius IV, 36; Paul *l.c.*; al-Majūsī (p. 11); and Ibn Sīnā (p. 173).

- 43 According to Galen, the “tightening” fatigue is caused by too much tension of muscles and tendons (*o.c.* III, 5; Kühn VI, p. 193; Koch p. 85).

Oribasius *l.c.*; Aetius IV, 37; Paul *l.c.*; ar-Rāzī p. 173; al-Majūsī *l.c.*; and Ibn Sīnā p. 173 mention the same cause as Galen.

- 44 The third and fourth kinds of fatigue which Qusṭā discusses in these lines are, as stated in note 40, two aspects of the third kind as discussed by Galen, namely, the “inflaming” one. For Galen’s description of its causes see note 40.

Oribasius *l.c.*; Aetius IV, 38; Paul *l.c.*; ar-Rāzī p. 178; al-Majūsī p. 12; and Ibn Sīnā p. 173 give the same explanation of its origin as Galen.

- 45 Soft massage: Galen, *De sanitate tuenda* III, 5 (Kühn VI, p. 195 ff.; Koch p. 86 ff.), recommends as treatment for the first kind of fatigue much soft massage with oil which does not have any astringent power; and for the second kind he recommends a little bit of soft massage with sweet, warm oil and bathing in warm water (cf. Qusṭā l. 111).

Oribasius *l.c.*; Aetius IV, 36, 37; Paul *l.c.*; ar-Rāzī p. 176; al-Majūsī p. 12; and Ibn Sīnā p. 174 mention the same main elements as Galen.

- 46 Gillyflower: Schmucker no. 290 *ḥirī*: “Cheiranthus cheiri L. (Cruciferae), Goldlack”; al-Bīrūnī p. 141, no. 21; Maimonides no. 394; Diosc. Wellmann III, 123/Berendes III, 128; Diosc. Triumphans III, 116.

- 47 Lily: Schmucker no. 410 *sausan*: “Lilium L. (Liliaceae) allg., Lilie”; al-Bīrūnī p. 194, no. 59; Maimonides no. 272; Flora II, pp. 1–7; Diosc. Wellmann III, 102/Berendes I, 1; Diosc. Triumphans III, 96; Dietrich remarks that although *īrisā* and *sausan* are interchangeable, *sausan* usually means the white lily.

- 48 Myrtle: See note 26.

- 49 Costus: Schmucker no. 576 *qusṭ*: “Kostuswurzel, von Aucklandia Costus FALC. (= Saussurea lappa CLARKE) (Compositae)”; al-Bīrūnī p. 268, no. 71; Maimonides no. 338; Diosc. Wellmann I, 16/Berendes I, 15; Diosc. Triumphans I, 13.

- 50 Solid storax: Schmucker no. 26 *iṣṭurak*: “Styrax officinalis L. (Styraceae). Nach den Quellen bezeichnet *iṣṭurak* die feste, *maiʿa* die flüssige Form”; Maimonides no. 228 makes the same statement, adding that the fluid storax is also called *mayʿa ar-ruhbān*; cf. note 163; al-Bīrūnī p. 32, no. 67; Diosc. Wellmann I, 66/Berendes I, 79; Diosc. Triumphans I, 28.

- 51 Fluid fragrant storax: Schmucker no. 753 *maiʿa*: “gilt allg. als Synonym von *lubnā* (no. 671: “Harz von Styrax officinalis (Styraceae)”; see preceding note.

- 52 Unguis odoratus: Lane V, p. 1913 *azfār aṭ-ṭib*: “are pieces of an odoriferous substance resembling the *azfār*; they are said by (the Arabic translator of) Dioscorides to be of the nature of the shards of shells”; Löw, *APf* p. 215; Diosc. Triumphans II, 6; Dietrich states: “Die ‘Duftkrallen’, Riechschale, Räucherklauen, waren als Ungues odorati, Opercula purpurea, Blatta byzantina im Handel. Es sind die hornartigen, nagelförmigen Deckelkap-

seln verschiedener Wasserschnecken, besonders von Strombus- und Murex-arten . . . , mit denen das Tier, wenn es sich zusammenzieht, die Öffnung seines Gehäuses verschliesst. Die Schnecken haben einen stempelförmigen Fuss ('Kralle, Klaue'), den sie weit vorstrecken und tief in den Boden graben. Der 'Duft' soll daher rühren, dass die Tiere die wohlriechenden Narden fressen."

- 53 Odiferous reed: Schmucker no. 579 *qaṣab aḍ-ḍarīra*: "Andropogon (= Cymbopogon), Rusagras, Kahnbartgras, Falscher Kalmus"; Lane III, p. 957: "A kind of perfume, the particles of the *qaṣab aṭ-ṭīb* (or calmus aromaticus, also called *qaṣab aḍḥ-ḍharīrah*", al-Bīrūnī p. 269, no. 36; as-Samarqandī p. 222, no. 391: "an odoriferous reed"; Maimonides no. 329; Muntner remarks that it is either Andropogon-Cymbopogon Martini Roxb. or Acorus calamus L.; Diosc. Triumphans I, 15; Dietrich remarks: "Die Identifizierung dieser Droge, in Europa seit dem 16. Jahr. in der Diskussion, hat grosse Schwierigkeiten bereitet. Nach späteren Forschungen . . . ist in dieser Duftpflanze das Andropogon (Cymbopogon) Martinii Roxb., Würzrohr, zu sehen, also das Kahnbartgras, Rusagras, auch "falscher Kalmus" genannt. Jedenfalls ist sie zu trennen vom "echten Kalmus" (Acorus calamus L.)."

54 Massage: See next chapter.

- 55 Third kind of fatigue: Galen, *De sanitate tuenda* IV, 10 (Kühn VI, p. 296; Koch p. 131), mentions as major elements of treatment: 1. bleeding, 2. bathing, 3. anointing, 4. eating a little bit of food.

Oribasius *l.c.*; Aetius IV, 36; Paul *l.c.*; ar-Rāzī p. 179; al-Majūsī p. 12; and Ibn Sīnā p. 174 mention the same elements, but omit the first one, just like Qusṭā.

- 56 Fourth kind of fatigue: As I tried to show in note 41, Qusṭā's fourth kind of fatigue is part of Galen's third kind. Its treatment is therefore the same as the one referred to in the previous note.

57 Oil of roses: See note 25.

58 Oil of gillyflower: See note 46.

- 59 Oil of violets: Schmucker no. 151 *banafsaj*: "Viola odorata L. (Violaceae), März-Veilchen"; al-Bīrūnī p. 79, no. 35; Flora III, pp. 495–496; Diosc. Wellmann IV, 121/Berendes IV, 120; Diosc. Triumphans IV, 110.

- 60 Oil of nenuphar: Schmucker no. 779 *nīlūfal*, *nīlūfar*: "Die Bestimmung lautet auf eine Nymphaea L., Seerose (Nymphaeaceae)"; al-Bīrūnī p. 323, no. 31; Maimonides no. 252; Flora II, p. 290; Diosc. Wellmann III, 132/Berendes IV, 112; Diosc. Triumphans III, 124.

Reviewing the cited material on fatigue it is clear that Galen's definition, terminology and treatment of the different kinds of fatigue had a decisive influence on all later authors, at least until Ibn Sīnā, within the scope of the present study. Qusṭā, citing Galen explicitly, is part of a long tradition.

- 61 Bath: The practice of bathing, originally part of gymnastics, was adopted by Greek physicians at an early period; see Juthner, *Die athletischen Leibesübungen*, p. 113: "Die von den Paidotriben und Gymnasten angewendeten und dann von den Ärzten übernommenen Mittel der Körperpflege waren schliesslich sehr mannigfaltig: entsprechende Ernährung, allerlei körperliche Betätigung, Bewegung, Einreibung, Massage, Reinigung durch Schwitzen und Purgieren, Bäder."

Hippocrates refers to hot and cold baths in his *Περὶ διαίτης* 57 (Littre VI, p. 571) and in his *Περὶ διαίτης ὀξέων* 18 (Littre II, pp. 364–376).

At the time of the Roman emperors this ancient practice was largely expanded; a regular bath not only consisted of immersion in water, but, as Galen, *Meth. medendi* X, 10 (Kühn X, pp. 708–9), remarks, of four parts or acts, each of which corresponded to a special compartment of the bath-house (cf. Bussemaker-Daremborg, notes to Oribasius, *Coll. Med.* X, ch. 1, pp. 865–75). Oribasius, mainly deriving his information from Galen, brings an extensive survey of the different kinds of baths and waters. Paul (I, ch. 51, 51) discusses bathing in cold and natural waters.

As part of the *sex res non naturales* the subject of bathing became a fixed theme in Arabic literature on hygiene (see note 7; Schipperges, *Arabische Medizin*, pp. 53–54).

The practice of bathing was at an early period already concentrated in the so-called *ḥammām*. This building, which, like the institution of bathing, was inherited from Graeco-Roman civilisation, was to play a central part in the social life of the inhabitants of the Muslim city (see E.I.² III, p. 139 ff. s.v. *ḥammām*; Grotzfeld, *Das Bad*, pp. 7, 26). Their initial prejudices against this foreign “innovation” were quickly overcome by the “ritualisation” of the *ḥammām*, i.e. by its use in the performance of the major ablution (see Grotzfeld, *o.c.*, p. 8; E.I.² l.c.).

The importance of this institution found its early reflection in literature as well; already in the ninth century three monographs were devoted to it, one of them by Qusṭā himself (see Grotzfeld, *o.c.*, p. 137 ff.; Sezgin, *GAS* III, p. 273, no. 32). Ibn Sīnā I, pp. 102–3 refers to a *ḥammām* containing three compartments: The first one is cold-moist, the second one hot-moist and the third one hot-dry. He also mentions the different kinds of waters to be used for different diseases.

For bathing as part of the treatment of fatigue see note 55.

Chapter 3

- 62 Massage: Already existed as a popular practice in the 5th century B.C. in ancient Greece; cf. Jones, *Hippocrates* IV, p. LIII. The Greek words for “trainer”, namely ἀλείπτης (anointer) and παιδοτριβης (boy-rubber), also suggest that massage was an important part of his duty; cf. Harris, *Greek athletes*, p. 171. This practice of massage, originating in the field of gymnastics, was later adopted by the physicians and became part of their *regimen sanitatis*; cf. note 61.

Hippocrates (Κατ’ ἡγερέων 17; Littre III, p. 323) states: “Les frictions peuvent relâcher les parties, les resserrer, donner de la chair, amaigrir; une friction sèche resserre; une friction molle relâche; une friction fréquente amaigrit; une friction modérée épaissit”; and (Περὶ διαίτης II, 65; Littre VI, p. 583): “Les frictions avec de l’huile et de l’eau amollissent et ne permettent pas un excès de chaleur.” These short, concise pronouncements served as a departure for later discussions.

Theon, an author on gymnastics active in Alexandria about 125 A.D., devoted several chapters of his work to the subject of massage. Fragments of it are preserved by Galen, who says (*De sanitate tuenda* II, 3; Kühn VI, p. 96; Koch p. 44) that, according to Theon, massage has a twofold aspect,

namely, quantity and quality, which are both essential. In a prescription of massage both must be considered. The quality has the double aspect of soft and hard. The quantity has the threefold aspect of little, mediocre and much; see Jüthner, *Philostratos*, pp. 16–21.

Galen, taking issue with Theon, remarks (*o.c.* II, 4; Kühn VI, p. 116; Koch p. 52) that his different combinations of massage are already implied in Hippocrates' statement. Galen concludes his disclosure by stating (*o.c.* II, 4; Kühn VI, p. 119; Koch p. 53) that, although only Hippocrates and his school had a correct understanding of massage, Theon had given the best exposition of it. Galen (*o.c.* II, 3; Kühn VI, p. 93; Koch p. 43) also argues with other anonymous authors who distinguish between many kinds of massage dependent on secondary circumstances, such as warmth or cold, little or much oil, hard or soft pressure; cf. Jüthner, *o.c.*, pp. 22–4.

Celsus, referring to Hippocrates' statement about massage, distinguishes four cases in which it must be applied. He also mentions the different parts of the body (*De Medicina* II, 14).

Oribasius (*Coll. Med.* VI, 13, 16) discusses the following elements of massage:

1. its purpose, namely, to remove the superfluities and preserve the body from fatigue; 2. preparatory massage (before physical exertion) and "apotherapeutical" massage (after physical exertion); 3. massage proper, consisting of nine possible combinations of quantity (short, mediocre, long) and quality (soft, mediocre, hard); 4. massage in the morning and evening; 5. massage as a cure for certain diseases (quotation from Herodotus).

Paul discusses preparatory massage (I, 15); "apotherapeutical" massage (I, 17) and massage proper, having nine possible combinations (I, 18).

The subject of massage is not systematically treated in the traveller's *regimina* mentioned in note 4. Ar-Rāzī refers to it twice (pp. 210, 219), but only shortly. Ibn Sīnā devoted a special chapter to it (I, pp. 161–2), in which he discusses the following points: 1. the different kinds (nine possible combinations); 2. its purpose; 3. preparatory and "apotherapeutical" massage.

Qusṭā's discussion of this theme seems to be more practical than theoretical when considering the following points:

1. He does not refer to all the possible combinations of massage, but confines himself to the three basic ones.
2. He does not distinguish between preparatory and "apotherapeutical" massage.
3. Central in his discussion is the application of massage; which concerns the parts of the hands that must be used; to what part of the body it must be applied; and how much force or pressure should be exerted.

Massage also played an important part in the bathing procedure of the *ḥammām*. It was part of a fixed schedule, taking place after the sweating in the *bayt al-ḥarāra*. For an extensive treatment of this theme see Grotzfeld *o.c.*, pp. 69–71.

63 Rubbing: For the terminology used by Qusṭā, namely, *dalk* (rubbing) and *ḡamz* (massage), see Grotzfeld, *o.c.* p. 70: "Die eigentliche Massage heisst *tadlik* oder *tadalluk*, in älterer Zeit auch *ḡamz*."

64 Convalescence: Galen, *o.c.* V, 3 (Kühn VI, p. 320; Koch p. 141), refers to

this kind of massage in the case of old men and young boys; Ibn Sīnā (I, 161) in the case of someone tired by physical exertion; Kroner, *Zur Terminologie der arabischen Medizin*, p. 40, in *‘āsh*: “Belebung (Ausdruck des Galen für die Behandlung der Greise und Reconvalescenten)”; Maimonides divided medicine into three main divisions: 1. preventive medicine; 2. treatment of sick people; 3. treatment of convalescent people, of cripples and old men (Muntner, *Regimen*, p. 45; Enc. Jud. XI, p. 1188).

Chapter 4

- 65 Wind: Wind, as a climatological element, is part of the first class of the *sex res non naturales*, namely, the “air around us” (see note 7). Consequently the diseases originating from the different winds are treated in the literary genre of the *regimen sanitatis* to which Qusṭā’s *Risāla* belongs. Hippocrates (Ἀφορισμοί 5; Littré IV, p. 488) describes the following diseases caused by south winds: deafness, poor vision, heaviness in the head, and torpor; and north winds cause: coughs, sore throats, constipation, difficult micturition accompanied by shivering, pains in the sides and chest; see also Περὶ χυμῶν 14; Littré V, p. 496. Hippocrates (Περὶ διαίτης II, 38; Littré V, p. 530 ff.) gives a description of the nature and power of every particular wind and of the properties of winds due to varieties of region; Hippocrates (Περὶ ἀέρων ὑδάτων τόπων 3, 4; Littré II, p. 14 ff.) refers to the diseases of inhabitants of cities exposed to hot and cold winds, while in his Περὶ ἱερῆς νόσου 13 (Littré VI, p. 384) he mentions the wholesome influence of the north wind on the human body and brain in the case of epilepsy.

Galen (*Hippocratis de humoribus liber et Galeni in eum commentarii* III, 13; Kühn XVI, p. 400), distinguishing between universal and local winds, states that local winds are less healthy than universal ones, and that north winds are the most salubrious. In his commentary on Hippocrates’ Π.α.υ.τ. (Hebrew translation, ed. and transl. Wasserstein G8, p. 23), Galen says: “And about the north wind it is said in the *Aphorisms* that it braces and strengthens the bodies, and that it renders them healthy and that it quickly eases their movements.” Wasserstein *l.c.* rightly remarks that Hippocrates never made this statement in his *Aphorisms*, but that a similar pronouncement can be found in his Περὶ ἱερῆς νόσου 13 (Littré VI, p. 384).

Oribasius, *Coll. Med.* IX, 9, citing Antyllus, makes the same statement about universal and local winds as Galen (*o.c.*, *l.c.*).

With regard to the traveller’s *regimina* mentioned in note 7, the influence of different winds on one’s health is discussed by Pseudo Thābit. Ar-Rāzī (p. 218) and Ibn Sīnā (p. 184) only mention the *samūm*. Aṭ-Ṭabarī (pp. 512–3) and Ibn Sīnā (I, p. 91) devoted a separate chapter to this theme.

Pseudo Thābit (p. 351), citing Hippocrates, says that north winds brace and strengthen the body and ease its movement, but also increase a previous pain in the sides of the chest; about south winds he remarks that they cause different diseases in ears and eyes. Quoting Galen he states that the wholesome effect of the north wind is caused by its dry nature, and the detrimental effect of the south wind is caused by its moist nature.

Aṭ-Ṭabarī *l.c.*, speaking about north winds, cites Hippocrates’ positive

and negative statements about their effect; while discussing south winds, he cites Hippocrates about their detrimental effect.

Ibn Sīnā *l.c.* says that north winds brace and strengthen the body; if a north wind is preceded by a south wind, however, it causes cough, pain in the chest and sides, and other diseases.

Reviewing the abovementioned traditions about the influence of north and south winds on the human body, one can clearly discern the central role of:

1. Hippocrates, stating the detrimental effect of south and north winds, while limiting the wholesome influence of north winds to those suffering from epilepsy;

2. Galen, affirming in his commentary on Hippocrates' Π.α.υ.τ. the salubrious influence of north winds without limiting it to epileptics.

The abovementioned Arab authors were all influenced by this positive statement of Galen about north winds, since they omit, as Galen did, Hippocrates' limitation. From this we can conclude that Pseudo Thābit and at-Ṭabarī, when citing Hippocrates, do not cite Hippocrates proper, but Hippocrates with Galen's commentary. According to Diller, *Die Überlieferung der Hippokratischen Schrift* Π.α.υ.τ., p. 155, Hippocrates' Π.α.υ.τ. was probably transmitted together with Galen's notes. Klein-Franke, *Vorlesungen*, p. 72, states that Hippocrates' works, except for *De Superfoetatione*, were known to the Arabs only indirectly, namely, through Galen's commentaries. These suppositions are thus confirmed by the citations of Pseudo Thābit and at-Ṭabarī.

Qusṭā's statement, only referring to the detrimental effect of north winds (11. 170–2), however, is clearly not influenced by Galen's commentary, but more in line with Hippocrates proper. Qusṭā most probably consulted the original Greek text of Hippocrates' treatise; cf. Ullmann, *Rufus* p. 28: "Seine (Qusṭā's) Sprachkenntnisse verschafften ihm einen unmittelbaren Zugang zu den Werken der griechischen Autoren, so dass er von den arabischen Übersetzungen unabhängig war, sofern er nur griechische Manuskripte besass."

66 Dust: Patah, stationed in Jiddah as a doctor for pilgrims during the years 1926–1933, mentions a large percentage of diseases of the lungs and bronchial tubes originating from the dust whirled up by the masses of pilgrims and by the winds (see Patah, *De medische zijde van de bedevaart naar Mekka*, p. 78); Burton (*Personal Narrative of a Pilgrimage to Mecca II*, p. 212) gives an impressive account of one of the frequent sandstorms occurring during the pilgrimage. This description can be applied to Qusṭā's time as well, when hygienic circumstances were probably even worse than in the time of Patah.

67 Rheum: See ch. 6, note 149.

68 Defluction: See ch. 6, note 150.

69 Turban: Ibn Sīnā gives in his traveller's regimen (p. 184) the following advice: "When someone fears the *samūm* he must bind a turban or muffler around his nose and bear its discomfort."

70 Diseases of the ears: Many medical authors have discussed diseases of the ear; among the ancients, for instance: Rufus (pp. 469–471, extract from ar-Rāzī) and Galen (Kühn XX, index *s.v. auris*); the Byzantine compilers:

Oribasius (*Ad Eunapium* IV, 35–43, *Coll. Med.* X, 35); Aetius (VI, 74–88); Alexander of Tralles (II, pp. 71–123) and Paul of Aegina (III, ch. 23).

They are also a fixed theme in the medical works of the Arab medical authors; see, for instance: Aṭ-Ṭabarī (pp. 180–182); Pseudo Thābit (ch. 9); ar-Rāzī (III, pp. 2–60); and Ibn Sīnā (III, pp. 153–161).

This subject will be treated more extensively in ch. 5.

- 71 Oil of roses: See note 25.
- 72 Oil of violets: See note 59.
- 73 Oil of lilies: See note 47.
- 74 Oil of jasmine: Schmucker no. 804 *yāsamīn*: “Jasmin. Stamppflanzen: *Jasminum officinale* L., *J. grandiflorum*, *J. sambac* AIT. (Oleaceae) u.a.”; al-Bīrūnī p. 340, no. 1; Ibn al-Quff no. 256; Maimonides no. 181; Flora III, pp. 396–7; Diosc. Triumphans III, 40, n. 7.
- 75 Oil of nard: Schmucker no. 756 *nārdīn*: “Narde allg. (für *Nardus* L. (Gramineae), Borstgras kaum in Frage kommend, vielmehr für *Valeriana* L. (Valerianaceae), Baldrian”); al-Bīrūnī p. 319, no. 2; Flora III, p. 386 ff.; Diosc. Wellmann I, 7/Berendes I, 6; Diosc. Triumphans I, 6.
- 76 Rheum, defluction: These diseases will be treated extensively by Qusṭā in ch. 6.
- 77 Nigella: Schmucker no. 442 *shūnīz*: “*Nigella sativa* L. (Ranunculaceae), Echter Schwarzkümmel, bzw. der Same davon”; al-Bīrūnī p. 363, no. 74; Ibn al-Quff no. 144 Schwarzkümmel: “Sein Geruch (in die Nase eingezo-gen) nützt gegen Kopfschmerzen kalter Natur und gegen Schnupfen”; Maimonides no. 365; Flora III, pp. 120–3; Diosc. Wellmann III, 79/Berendes III, 83; Diosc. Triumphans III, 74.
- 78 Cumin: Schmucker no. 649 *kammūn*: *Cuminum cyminum* L. (Umbelliferae), Kreuz-Kümmel”; al-Bīrūnī p. 282, no. 35; Ibn al-Quff no. 223; Maimonides no. 193; Diosc. Wellmann III, 59/Berendes III, 61; Diosc. Triumphans III, 57.
- 79 Clove: Schmucker no. 572 *qaranful*: “Gewürznelken (eigtl. die Blütenknospen des Gewürznelkenbaumes). Als Stamppflanzen gelten: *Eugenia caryophyllata* THUNB. (*Caryophyllus aromaticus* L., *Jambosa caryophyllus*, *Syzygium aromaticum*; alle einander entspr.) (Myrtaceae), der Gewürznelkenbaum”; al-Bīrūnī p. 265; no. 15; Ibn al-Quff no. 212; Flora II, pp. 275–9; Diosc. Triumphans III, 44, n. 7.
- 80 Mace: Schmucker no. 123 *basbāsa*: “*Myristica fragrans* Houtt. (Myristicaceae), Muskatnussbaum, meist die Muskatblüte”; Maimonides no. 38; Diosc. Wellmann I, 82/Berendes I, 111; Diosc. Triumphans I, 50.
- 81 Saffron: Schmucker no. 349 *zaʿfarān*: “*Crocus sativa* L. var. *culta autumnalis* (Iridaceae), Safran”; al-Bīrūnī p. 166, no. 16; Ibn al-Quff no. 106; Maimonides no. 135; Flora II, pp. 7–25; Diosc. Wellmann I, 26/Berendes I, 25; Diosc. Triumphans I, 23.
- 82 Memeceylon tinctorium: Schmucker no. 81 *wars*: “Eicheln von *Flemingia rhodocarpa* BAK., welche vielleicht identisch ist mit *F. grahamiana* (W. et A.) (Ordn. Leguminosae). Weitere Literatur und Angaben: Sig 73: a. Gelbstoff von *Memecylon tinctorium* WILLD. (Melatomataceae, Ordn. Myrtales), “Safranbaum”. 2. Gelbstoff aus Drüsen v. *Flemingia rhodocarpa* BAK.”; al-Bīrūnī p. 334, no. 4; Maimonides no. 123; Löw, *APf.* p. 132; see

also line 410, MS D *wars*, MSS BC *warsh*; in note 327 I explain why I emended *wars* into *rūs*.

- 83 Aloeswood: Schmucker no. 506 *‘ūd*: “Aloexylon agallochon (Papilionaceae), Echter Aloeholzbaum”; al-Bīrūnī p. 234, no. 51; Ibn al-Quff no. 185; Maimonides no. 296; Flora III, pp. 411–4; Diosc. Wellmann I, 23/Berendes I, 21; Diosc. Triumphans I, 20.
- 84 Camphor: Schmucker no. 610 *kāfūr*: “Kampfer (natürlich, abgesehen von den verschiedenen Sorten von *Camphora synthetica*), bes. aus dem Holz von *Cinnamomum camphora* FR. NEES. (Lauraceae), dem Kampferbaum”; Ibn al-Quff no. 214; Maimonides no. 206; Flora II, pp. 111–7; E.I.² IV, p. 417 *s.v. kāfūr* (A. Dietrich); Diosc. Triumphans III, 24, n. 6; WKAS I, p. 10.
- 85 Sandalwood: Schmucker no. 461 *ṣandal* mentions three kinds: 1. white sandalwood (*Santalum album* L. (Santalaceae); 2. red sandalwood (*Pterocarpus santalinus* L.); 3. yellow sandalwood. Ibn al-Quff no. 154; Flora III, pp. 341–6.
- 86 Roses: See note 25.

Chapter 5

- 87 For a survey of authors discussing earache see note 70; this ailment is not discussed in the traveller’s *regimina* as referred to in note 4, with the exception of Ibn al-Jazzār (MS Dresden, Bk. II, chs. 7, 8, 9, 10; see Dugat, *Études*, p. 324).
- 88 A comparative table may show the close correspondence between the indications mentioned by Qusṭā for earache caused by cold and those referred to by Paul III, ch. 23, 1:

Qusṭā

فان عرض وجع الاذن من برودة كان
دليله ان الوجع يكون في داخل
الاذن في عمقها ولا يكون معه ثقل
ولا تمدد ولا حمرة في ظاهر الاذن
.... ولا يكون ما تقدم من تدبيره
يوجب حرارة وان تكون الهوا
باردا والرياح الهابة شمالية

Paul

Τὴν μὲν διὰ ψύξιν γινομένην ὠταλ-
γίαν ἐκ τε τῆς ὥρας καὶ τῆς προηγ-
σαμένης διαίτης ἢ καὶ τῆς τοῦ κάμ-
νοντος ἀνακρίσεως, εἰ διὰ
προκαταρκτικὴν αἰτίαν γένοιτο,
μαθόντες ἐκ τε τοῦ διὰ βάθους
ἐνεστηρίχθαι τὸν πόνον χωρὶς
βάρους ἢ διαστάσεως ἢ πυρώσεως

*Translation:**Qusṭā*

The indications for earache caused by cold are: 1. The pain is felt deep inside the ear; 2. The head is not heavy, the ear is not tense and does not look red; 3. The rest of the body is free of heat; 4. The earlier regimen of the body in regard to food, drink and surrounding air has not heat as a necessary consequence, but cold; 5. The air is cold and the winds are blowing from the north.

Paul

When we have ascertained that the earache is caused by cold, because of the season and earlier regimen, or also because of an interrogation of the patient if it originated from a previous cause, and because of the fact that the pain is deep in the ear without heaviness, tension or inflammation . . .

It is obvious that they share the following elements:

1. pain deep inside the ear; 2. without heaviness; 3. without tension; 4. without inflammation; 5. earlier regimen; 6. season. These indications are not referred to by the other authors in note 70; ar-Rāzī p. 19 says that the cause of earache must be derived from regimen, time (of the year) and temperament.

- 89 Surrounding air (*al-hawāʾ al-muḥīṭ*): Already mentioned by Hippocrates as a possible cause of diseases, cf. Περὶ φύσων 1–15 (Littre VI, pp. 88–115) and especially ch. 5 (Littre p. 97): “Ainsi donc il est dit que tous les animaux participent grandement à l’air; maintenant il faut exposer sans délai que, selon toute vraisemblance, la source des maladies ne doit pas être placée ailleurs, alors qu’il entre dans le corps, soit en excès, soit en défaut, ou trop à la fois ou souillé de miasmes morbifiques.”

See also Galen, *Hippocratis epidemia I et Galeni in illum commentarius* (Kühn XVII 1, p. 3). Galen also refers to its part in spreading contagious diseases (see note 407 as well).

Oribasius, *Coll. Med.* IX, 1, distinguishes between air which influences health in the same degree, for instance, the air in marshes and in valleys, and air which has a different influence on health dependent on the mixture of the four elementary qualities, namely, warmth, cold, dryness and moisture. This statement of Oribasius is repeated by Paul I, ch. 49.

For a treatment of the subject in Arabic medical literature see, for instance, at-Ṭabarī pp. 509–2 and Ibn Sīnā I, pp. 80–1.

Qusṭā discusses this theme extensively in his *Kitāb fī al-iʿdāʾ*. (Ed. Fāhndrich chs. 36, 37).

- 90 A comparison with Paul will show the difference and similarity:

Qusṭā

فاما ان كان التدبير المتقدم
تدييرا حارًا وكان الهواء حارًا
وهبت رياح جنوبية وكان الوجع
نفسه مع تمدد ومع حمرة في اللون
وثقل في الرأس، فإن ذلك دليل
على ان الوجع من حرارة

Paul

τὴν δὲ διὰ θερμὴν δυσκρασίαν ὀδύ-
νην, ἐφ' ἧς ζέσεώς τινος χωρὶς
βάρους ἢ τάσεως αἰσθάνονται, τοῖς
ἐναντίοις ἰάσαιο . . . τὴν δὲ γε διὰ
γλίσχρους καὶ παχεῖς χυμοὺς ὀδύ-
νην ἐκ τε τοῦ τῆς κεφαλῆς καὶ αὐ-
τῆς τῆς ἀκοῆς βάφους καὶ τῆς
προηγησαμένης διαίτης διαγίνωσκε
. . . εἰ δὲ καὶ βάρος καὶ διάτασις
ἅμα θερμὴ καὶ σφυγματώδης ἢ
ὀδύνη γίνοιτο, ἢ καὶ πυρέττοι, φλεγ-
μαίνειν ἴσθι τὴν ἀκόην.

*Translation:**Qusṭā*

The following points indicate that the earache was caused by heat:

1. The earlier regimen . . . was hot; 2. The air is warm and southern winds are blowing; 3. The pain is accompanied by tension (in the ear), by a red colour and by a heavy feeling in the head.

Paul

Pain, caused by a warm "dyscrasia", in which one feels an intense heat without heaviness or tension, must be healed by opposite means . . . That the pain is caused by viscous, thick humours can be ascertained from heaviness of head and ears and from the earlier regimen . . . You must know that there is an inflammation of the ears if heaviness and tension occur together with heat and pain occurs with a strong pulse or fever as well.

This comparison shows clearly that Paul, unlike Qusṭā, mentions the feeling of an intense heat without heaviness or tension as indications for earache caused by heat. It is also obvious that Qusṭā's indications for earache caused by heat are part of Paul's indications for two different kinds of earache, namely, the one caused by viscous, thick humours and the one caused by an inflammation.

Alexander (II, p. 77) mentions the same indications as Paul for earache caused by inflammation. According to Oribasius (*Ad Eunapium* IV, 36), earache with heaviness of the head is caused by thick, inflammatory humours; Aetius (VI, 77) mentions the same cause for this kind of earache.

Aṭ-Ṭabarī (pp. 180–2), Pseudo Thābit (ch. 9) and Ibn Sīnā (III, pp. 153–161) do not mention these indications for earache caused by heat. Ar-Rāzī (III, p. 19) mentions a hot pain without secretion, tension or heaviness, and without a regimen causing fullness, but with heat and inflammation.

- 91 A comparison with Alexander (II, p. 71) and Paul *l.c.* will show the respective similarity and difference in diagnosis:

Qusṭā

وان كان الوجع مع تمدد
وكان معه طنين ولم يكن معه
ثقل، فانه دليل على ان الوجع
من ريح مستكنة في الاذن
ليس لها مسلك تخرج منه .

Alexander

εἰ δὲ διάτασις μὲν γένοι-
το, βάρους δὲ μηδ' ὄλως
αἰσθάνοιτο περὶ τὴν
κεφαλὴν ἢ ἀκοὴν, εὐδη-
λον, ὥς πνεῦμα φουσῶδες
καὶ παχὺ, μὴ εὐρίσκον
διέξοδον ὑπολαμβάνειν
δεῖ μᾶλλον τὸ τῆς ὁδύνης
αἴτιον.

Paul

χωρὶς δε βάρους
ἢ διάτασις μόνη τῆς
ἀκοῆς πνεῦμα φυ-
σῶδες οὐκ ἔχον
διέξοδον δηλοῖ.

Translation:

Qusṭā

If, however, the pain is ac-
companied by tension and
tingling (of the ear), but
not by heaviness in the
head, it is an indication
that the pain is caused by a
wind which got stuck in the
ear and cannot find a way
out.

Alexander

Sollte Spannung vorhan-
den sein und der Kranke
dabei durchaus keine
Schwere im Kopfe oder in
den Ohren fühlen, so ist es
klar, dass blähende, dicke
Luft, welche keinen Aus-
weg finden kann, haupt-
sächlich die Ursache des
Schmerzes bildet.

Paul

Only tension in the ear,
without heaviness, indi-
cates a flatulent wind,
which cannot find a way
out.

Galen, *De compositione medicamentorum secundum locos* III, 1 (Kühn XII, p. 605), gives a remedy for a flatulent wind and viscous humour in the ear which cannot find a way out.

Oribasius *l.c.* says that a flatulent wind is caused by a previous cold. Aetius (VI, 74) states that earache can also be caused by a flatulent wind which cannot find a way out.

Qusṭā deviates from the authors referred above insofar as he includes the element of the tingling of the ear in his diagnosis. This element is discussed separately by Galen, *l.c.* (Kühn XII, pp. 642–7); Alexander (II, p. 93); Aetius (VI, 79); and Paul (III, ch. 23, 10). Alexander *l.c.* says that tingling of the ears can be caused by a “thick, flatulent wind.”

The Arab authors mentioned in note 70 do not give a diagnosis for this earache. Ar-Rāzī (p. 44) mentions as one of the possible causes of tingling of the ears a flatulent wind which cannot find a way out. Ibn Sīnā (p. 155) says that a tingling in the ears, similar to a sound which repeats itself or to the rustling sound of a tree, is caused by a wind which got locked (استكان ريح; cf. Qusṭā).

- 92 This principle of healing earache caused by cold with warm drugs is mentioned by Galen, *De remediis parabilibus* I, 3 (Kühn XIV, p. 330), Oribasius, *Ad Eunapium* IV, 35; Aetius VI, 75; Alexander II, p. 77; and Paul III, ch. 23, 1.

Galen, assuming that illness results from a disturbance of the balance of the quantities and qualities of the four humours, developed the therapeutic

principle of *contraria contrariis* (see Kircher, *Die einfachen Heilmittel*, p. 20; Puschmann, *Alexander I*, p. 171).

Of the Arab authors mentioned in note 70, the principle is applied by Pseudo Thābit (ch. 9) and by ar-Rāzī (p. 44), both citing Galen.

- 93 Rue: Schmucker no. 370: *sadāb*, *sadāb*: "Ruta graveolens L. (Rutaceae), eine Raute"; al-Bīrūnī p. 180, no. 11; Maimonides no. 279; Diosc. Wellmann III, 45–46/Berendes III, 45 *Raute*: "Der Saft, in der Granatapfelschale erwärmt und eingetröpfelt ist ein wirksames Mittel bei Ohrenschmerzen"; Diosc. Triumphans III, 45.
- 94 Oil of nard: See note 75.
- 95 Oil of laurel: Schmucker no. 511 *ġār*: "Laurus nobilis L. (Lauraceae), Lorbeerbaum, Lorbeer"; az-Zahrāwī p. 82; al-Bīrūnī p. 246, no. 6; Ibn al-Quff no. 187; Flora II, pp. 119–123; Diosc. Wellmann I, 78/Berendes I, 49 *Lorbeeröl*: "Es hat erwärmende, anregende, die Erschlaffung aufhebende Kraft. Es ist ein gutes Mittel bei allen Neuralgien, Ohrenleiden und katarhalischen Zuständen"; Diosc. Triumphans I, 45.
- 96 Feverfew: Diosc. Triumphans III, 130 *al-uḡhuwān*: "Die weisse Art dieser Pflanze ist wahrscheinlich *Matricaria parthenium* L. und Var. (= *Chrysanthemum parthenium* Pers. oder *Pyrethrum parthenium* Smith), Mutterkraut, Compositae"; al-Bīrūnī p. 38, no. 82; Maimonides no. 20; Diosc. Wellmann III, 138/Berendes III, 145.
- 97 Euphorbia: Schmucker no. 55 *afarbiyūn*: "Euphorbia resinifera Berg. und andere Arten: Euphorbia, Wolfsmilch"; al-Bīrūnī p. 250, no. 13; Ibn al-Quff no. 191; Maimonides no. 25; Flora I, pp. 602–607; Diosc. Wellmann III, 82/Berendes III, 86; Diosc. Triumphans III, 77.
- 98 Castor: Diosc. Triumphans II, 22 *al-jundbādasar*: "Castor fiber, der Biber, Castoridae . . . Das Bibergeil bezeichnet nicht, wie die arabischen Autoren annehmen, die Hoden des Tieres, sondern das Castoreum, ein Smegma aus den neben den Geschlechtsdrüsen weiblicher und männlicher Tiere gelegenen Geil- oder Kastorbeuteln"; al-Bīrūnī p. 112, no. 35; Ibn al-Quff no. 65; Maimonides no. 79; Diosc. Wellmann II, 24/Berendes II, 26.
- 99 Oil of balsam: Schmucker no. 139 *balasān*: "Commiphora opobalsamum Engl., Mekkabalsam"; al-Bīrūnī p. 73, no. 23; az-Zahrāwī p. 84; Flora I, pp. 299–304; Diosc. Wellmann I, 19/Berendes I, 18; Diosc. Triumphans I, 16.
- 100 Camomile: Schmucker no. 93 *bābūnaj*: "Anthemis nobilis L. (Compositae), Römische Hundskamille, Mutterkamille"; Maimonides no. 39; Flora I, pp. 375–8; E.I.² Suppl. s.v. *bābūnaj* (A. Dietrich); Diosc. Wellmann III, 137/Berendes III, 144; Diosc. Triumphans III, 129.
- 101 Melilot: Schmucker no. 64 *iklīl al-malik*: "wohl die Leguminosa *Melilotus officinalis* Lam."; al-Bīrūnī p. 41, no. 85; Ibn al-Quff no. 3; Maimonides no. 7; Flora II, p. 465; Diosc. Wellmann III, 40/Berendes III, 41b *Steinklee*: "Ferner lindert er roh mit süßem Wein zu Saft verarbeitet und eingetröpfelt Ohrenschmerzen"; Diosc. Triumphans III, 40.
- 102 Violets: See note 59.
- 103 Harmel: Schmucker no. 240 *ħarmal*: "Peganum harmala (Rutaceae), Harmel-Staude"; Ibn al-Quff no. 78; Maimonides no. 160; Flora III, pp. 507–511; Diosc. Wellmann III, 47/Berendes III, 46; Diosc. Triumphans III, 46.

104 Laurel leaves: See note 95.

105 Fomentation: See al-Qalānisī p. 217 *kimād*: “heisser Umschlag, Kompreßse, Kataplasma.”

For similar and other remedies for earache caused by cold see: Rufus (pp. 469–1); Galen (*De comp. med. sec. locos* III, 1; Kühn XII, p. 600; *De remediis parabilibus* I, 3; Kühn XIV, p. 330); Oribasius (*Ad Eunapium* IV, 35); Paul (III, ch. 23, 1); Aetius (VI, p. 77.); SBM (II, pp. 112–113); Alexander (II, p. 77); aṭ-Ṭabarī (pp. 180–1); Pseudo Thābit (ch. 9); ar-Rāzī (III, pp. 6, 24, 28 e.p.); Ibn Sīnā (III, p. 153).

In ch. 4, 1. 179 Qusṭā recommends oil of lilies, oil of jasmine, oil of nard and the like for earache caused by cold winds.

106 For the principle of healing earache caused by heat with cold drugs see note 92.

107 White of an egg: Diosc. Wellmann II, 50/Berendes II, 54–55; Diosc. Triumphans II, 37; Ibn al-Quff no. 31: “Eiweiss ist kalt und feucht zu Beginn des zweiten Grades; Eiweiss bei beginnenden Geschwülsten warmer Natur aufgelegt, nützt und dämpft derer Schmerz”; See note 39 as well.

108 Oil of roses: See note 25.

109 Extract: Al-Qalānisī p. 224 *māʿ*: “Sammelbegriff für verschiedene Arzneimittel; Wasser; Saft; Extract; Dekokt; Lösung.”

110 Alkekenji: Schmucker no. 613 *kākanj*: “*Physalis alkekengi* L. (Solanaceae), Judenkirsche, wohl auch *Physalis somnifera* L., deren Früchte die Droge “Judenkirsche” bilden”; Ibn al-Quff no. 216; Maimonides nos. 201, 297; Diosc. Triumphans IV, 63, n. 10.

111 Coriander: Schmucker no. 635 *kuzbara*: “*Coriandrum sativum* L. (Umbelliferae), Koriander”; al-Bīrūnī p. 278, no. 14; Ibn al-Quff no. 213; Maimonides no. 183; Flora III, pp. 441–7; Diosc. Wellmann III, 63/Berendes III, 74; Diosc. Triumphans III, 60.

112 Earthworms: Freytag I, p. 477 *ḥarāṭīn*: “*Vermes qui in terra humida reperiuntur, lumbrici terrae, sec. alios Tubera terrae*”; Maimonides no. 402: “*Lumbricus terrestris* L.”.

113 Seashells: Al-Bīrūnī p. 205, no. 8; Ibn al-Quff no. 160; Diosc. Wellmann II, 4–9/Berendes II, 4–11.

114 Oil of almonds: Diosc. Wellmann I, 33/Berendes I, 39: “Mandel-öl wirkt gegen Ohrenleiden, Ohrensausen und Ohrenklingen”; See also note 20.

115 Asphodel: Diosc. Triumphans II, 152 *al-ḥunṭā*: “Die Pflanze ist *Asphodelus ramosus* L., *Asphodelus*, *Affodill*, *Liliaceae*”; al-Bīrūnī p. 14, no. 57; Maimonides no. 395; Diosc. Wellmann II, 169/Berendes II, 199 *Asphodelos*: “Bei eiterflüssigen Ohren hilft er für sich allein mit Weihrauch, Honig, Wein und Myrrhe zusammen erwärmt.”

116 *Ishrās*: Maimonides (no. 395) states that the flour resulting from the drying and pounding of the root of the asphodel is called *ishrās*.

A comparison with Alexander II, p. 77 and Paul *l.c.* will show the similarity in their prescriptions for earache caused by heat:

Qusṭā

white of an egg
 –
 extract of alkekenji
 oil of roses
 –
 extract of fresh coriander
 olive oil
 earthworms
 seashells with the animals in them
 oil of sweet almonds
 asphodel

Alexander-Paul

white of an egg
 breast milk
 extract of pellitory
 oil of roses
 extract of black-nightshade
 extract of coriander
 oil
 earthworms
 Triton's shells
 oil of almonds
 extract of asphodel

For remedies containing similar ingredients see Galen, *De remediis parabilibus* I, 3 (Kühn XIV, p. 330); Oribasius, *Ad Eunapium* IV, 36, *Coll. Med.* X, 35; Aetius VI, 76; ar-Rāzī III, pp. 28, 29, 40; Pseudo-Thābit ch. 9; Ibn Sinā III, p. 153.

In ch. 4, 1. 179 Qusṭā recommends oil of roses, oil of violets and the like for earache caused by a warm wind.

117 Drops: Al-Qalānīsī p. 255 *qaṭūr*: “Tropfen, Ohrentropfen.”

118 Vinegar: Diosc. Wellmann V, 13/Berendes V, 21 Essig: “Bei Wassersucht und Schwerhörigkeit, bei Ohrensausen und -Brausen ist er in der Räucherung heilsam. Eingetropfelt tödtet er Würmer in den Ohren”; al-Bīrūnī p. 147, no. 46; Maimonides no. 322; Flora I, pp. 102–7; Diosc. Triumphans I, 69, n. 16.

119 Honey: Schmucker no. 486 *‘asal*: “mel, Honig”; al-Bīrūnī p. 225, no. 16; Ibn al-Quff no. 178; Diosc. Wellmann II, 82/Berendes II, 101; Diosc. Triumphans II, 64.

120 Borax: Schmucker no. 153 *bauraq*: “Natron, Sodiumkarbonat”; Goltz p. 248, mentioning the different kinds of *bauraq*, states: “Dies wären an sich bereits genügend Bedeutungen für ein einziges Wort. Aber es kommt noch eine weitere Substanz hinzu, indem das nitrum des Dioskurides und Galen mit *bauraq* gleichgesetzt wird, oder das aus diesen Texten transkribierte *naṭrūn* mit *bauraq* glossiert wird”; Ibn al-Quff no. 39; Maimonides no. 51; Diosc. Wellmann V, 113/Berendes V, 129.

121 Honey: See note 118.

122 Natron: Diosc. Wellmann V, 113/Berendes V, 129; Ibn al-Quff no. 245; Maimonides no. 51; Goltz p. 170; see note 120 as well.

A comparison with Alexander II, p. 73 and Paul *l.c.* will show the similarity in prescription:

Qusṭā

فان كان وجع الاذن
 من ریح مستكنة في موضع
 السمع ... ويستعمل فيها
 ايضا قطور متخذ من خل
 وعسل وبورك او من عسل
 ونبیذ مطبوخ ونطرون

Alexander

Εἰ μὲν οὖν δι' ἔμφοραξιν
 ἐκ τῆς φλεγμονῆς ἡ
 ὀδὴ γίνοιτο, δῆλόν ἐστιν,
 ὡς τούτοις ἀρμόζει
 προσφέρειν . . . , οἶόν
 ἐστι τὸ ἀφρόνιτρον
 ὀλίγου μιχθέντος αὐτῷ
 μέλιτος καὶ ὄξους.

Paul

χωρίς δὲ βάρους ἡ διάτα-
 σις μόνη τῆς ἀκοῆς πνευ-
 μαφισῶδες οὐκ ἔχον
 διέξοδον δηλοῖ. χρηστέ-
 ον . . . οἶόν ἐστι τὸ ἀφρό-
 νιτρον σὺν ὄξει καὶ μέλιτι

*Translation:**Qusṭā*

... that the earache is caused by a wind which got stuck in the ear ... One can also use drops prepared from vinegar, honey and borax, or from honey, boiled wine and natron.

Alexander

Wenn der Schmerz von einer durch Verstopfung erzeugten Erzündung herührt ... Derartig wirkt das Schaumnatron, wenn es mit ein wenig Honig und Essig vermischt wird.

Paul

If there is only tension in the ear, without heaviness, it is clear that (the pain is caused by) a flatulent wind which cannot find a way out. One must apply ... such as natron with vinegar and honey.

For similar and other remedies see Rufus p. 470; Galen, *De comp. med. sec. locos* III, 1 (Kühn XII, p. 605); Oribasius, *Ad Eunapium* IV, 36; Aetius VI, 77; at-Ṭabarī pp. 180–1; ar-Rāzī III, pp. 7–8; Ibn Sīnā III, p. 156.

- 123 Gall of a lamb: Diosc. Wellmann II, 78/Berendes II, 96: “Schafgalle heilt eiternde Ohren und die Flüsse aus ihnen, wenn sie mit Ziegen- oder Frauenmilch eingetröpfelt wird”; al-Bīrūnī p. 304, no. 29; Ibn al-Bayṭār IV, p. 153.

- 124 Oil of roses: See note 25.

- 125 Oil of almonds: See note 114.

A comparative table will show that Alexander *l.c.* and Paul *l.c.* mention the same remedies with minor variations:

Qusṭā

ويقطر في الاذن ايضا شيئا
من مرارة الحمل مع دهن
ورد ونبذ مطبوخ ودهن
لوز

Alexander

καὶ χολὴ δὲ προβατεία καὶ
τούτοις ἀρμόζει μετ’
ἐλαίου προσφερομένη.
καλὸν δὲ καὶ ἄμυδα-
λινον ἂν εἶη τὸ ἔλαιον.

Paul

καὶ ἡ προβατεία χολὴ
σὺν ἐλαίῳ κοινῶ ἢ ἄμυγ-
δαλίνῳ

*Translation:**Qusṭā*

One can likewise drip into the ear a little bit of the gall of a lamb with oil of roses, or with boiled wine, or with oil of almonds.

Alexander

Auch die Schafgalle, mit Oel aufgetragen, ist in diesen Fällen zweckmässig. Einen günstigen Erfolg dürfte auch das Mandelöl haben.

Paul

... gall of a sheep with regular oil or with oil of almonds.

- 126 Leek: WKAS I, pp. 119–120 *kurrātun*, *karrātun*: “Leek (*Allium Porrum* L.); Schmucker no. 624; al-Bīrūnī p. 277, no. 8; Maimonides no. 198; Flora II, pp. 131–8; Diosc. Wellmann II, 149/Berendes II, 178; Diosc. *Triumphans* II, 132.

- 127 Onion: Schmucker no. 128 *baṣal*: “*Allium cepa* L. (*Liliaceae*), Küchen- oder

Sommer-Zwiebel"; Ibn al-Quff no. 33: "Träufelt man Zwiebelsaft in die Ohren so löst sie die Substanzen und (beseitigt) das Klingeln"; Flora II, pp. 125–31; Diosc. Wellmann II, 151/Berendes II, 180; Diosc. Triumphans II, 134.

128 Honey: See note 119.

A comparison with Alexander *l.c.* and Paul *l.c.* shows clearly that they mention the same remedy:

<i>Qusṭā</i>	<i>Alexander</i>	<i>Paul</i>
وما الكراث او البصل اذا فتر وخلط معه شيء يسير من عسل اذهب وجع الاذن الذي يكون من ريح وخلط لرج.	ὁ πράσου χυλὸς ἐνστα- ζόμενος χλιαρὸς καθ' ἑαυτὸν καλῶς ποιεῖ καὶ μετ' ὀλίγου μέλιτος. Ἄλλο· κρομμύων χυλὸν μετὰ μέλιτος μίξας ἐνσταζε.	καὶ τοῦ πράσου καὶ τοῦ κρομμύου ὁ χυλὸς χλια- ρὸς μετὰ μέλιτος

Translation:

<i>Qusṭā</i>	<i>Alexander</i>	<i>Paul</i>
or the extract of leek or on- ion; if this is made luke- warm and mixed with a lit- tle bit of honey, it takes away the earache which is caused by wind and vis- cous humour.	Ferner wirkt der lauwarne Lauch-Saft, sowohl allein für sich eingeträufelt, als auch mit ein wenig Honig vermischt, ausgezeichnet. Oder man träufele Zwie- belsaft ein, der mit Honig vermischt worden ist.	... also the lukewarm ex- tract of leek and onions, (mixed) with honey.

129 Mountain origin: Schmucker no. 454, no. 4 *ša^ctar jabalī*: "Die 'Gebirgs'-Art die allenthalben belegbar ist. Bei der Artenfülle der Pflanze ist es ohne exakte botan. Angaben müssig, den einen oder anderen Vertreter bestimmungs-mässig festlegen zu wollen, etwa letzteren als *T. serpyllum* L. var. *Kotschyana* BOISS"; al-Bīrūnī p. 205, no. 11; Maimonides no. 319; Diosc. Triumphans III, 29; IV, 168.

130 Honey: See note 119.

131 Breast milk: Diosc. Wellmann II, 70/Berendes II, 78; Berendes remarks: "Die Frauenmilch ist im ganzen Altertum ein beliebtes Mittel; die Hippokratiker wenden sie meist äusserlich an, z.B. bei Eiterfluss aus Nase und Ohren . . ."; Diosc. Triumphans II, 57. For a treatment of the different kinds of milk see: Aṭ-Ṭabarī pp. 386–8; ar-Rāzī XXI 2, pp. 414–59; Ibn Sīnā II, pp. 355–8.

A comparison with Alexander *l.c.* and Paul *l.c.* shows that they mention the same remedy:

Qusṭā

Alexander

Paul

والصعتر الجبلي اذا سحق
وخلط مع عسل ولبن امرأة وقطر
في الاذن اذهب وجع الاذن الذي
يتولد من ريح غليظة واخلاط
لزجة .

*Ἀλλο. ὀρίγανον τρίψας ἢ ὀρίγανον τρίψας μετὰ
μετὰ μέλιτος καὶ γάλακ- μέλιτος καὶ γάλακτος
τος γυναικείου ἐγχυμά- γυναικείου ἐνσταζε
τιζε.

Translation:

Qusṭā

Alexander

Paul

When one pounds moun-
tain origan, mixes it with
honey and breast milk and
drips it into the ear, it takes
away the earache, which is
caused by a coarse wind
and viscous humours.

Oder man lasse Dosten mit
Honig und Frauenmilch
zerreiben und einspritzen

... one can also drip into
the ear origan pounded
with honey and breast
milk.

For other remedies composed with breast milk see: Oribasius, *Ad Eunapium* IV, 36; Aetius VI, 76.

- 132 Proven by experience (*mujarrab*): See Ullmann, *Medizin* p. 311 “Die *mujarrabāt*-Literatur”: “Die *Mujarrabāt* sind nicht *Experimenta* sondern *empirica*, durch Erfahrung bestätigte Rezepte. Indes ist solche Kennzeichnung nur das Aushängeschild, das den betont superstitiösen und magischen Charakter der Rezepte kaschieren soll. Wie schon bei Alexander von Tralleis werden auch im Islam gerade diejenigen Mittel als “durch Erfahrung erprobt” ausgegeben, deren Wirkung sich der Erfahrung entzieht.” These kinds of recipes developed into a proper literary genre; see Ullmann *o.c.*, pp. 312–3.
- 133 Almonds: See note 114.
- 134 Dirham: The standard dirham is 3,125 grams (Hinz, *Islamische Masse und Gewichte*, p. 3).
- 135 Borax: See note 119.
- 136 Opium: Schmucker no. 60 *afyūn*: “Opium”; al-Bīrūnī p. 36, no. 76; Maimonides no. 35; Flora II, pp. 364–370; E.I.² I, p. 243 *s.v. afyūn* (C.E. Dübler); Diosc. Wellmann IV, 64/Berendes IV, 65 *Gartenmohn*: “Erasistratos sagt allerdings Diagoras verwerfe seinen Gebrauch bei Ohren- und Augenleiden, weil er Stumpfsichtigkeit und Betäubung bewirkte”; Diosc. *Triumphans* II, 159, n. 2.
- 137 Frankincense: WKAS I, p. 83 *kundurūn*: “(gum-resin of) *Olibanum* tree (*Boswellia Carterii* Birdw. etc.)”; Schmucker no. 651; al-Bīrūnī p. 283, no. 37; Flora I, pp. 312–4; Diosc. Wellmann I, 68/Berendes I, 81: “Weihrauch ... heilt Ohrenquetschungen mit Pech aufgestrichen, gegen die übrigen Ohrenleiden hilft er mit süßem Wein eingegossen”; Diosc. *Triumphans* I, 30.
- 138 Thistle: Schmucker no. 97 *bādāward*: “*Picnomon Acarna* Coss., *Akanthusdistel*”; al-Bīrūnī p. 68, no. 1; Ibn al-Quff no. 41; Maimonides no. 44; Diosc. *Triumphans* III, 14, n. 2.

139 Myrrh: Schmucker no. 704 *murr*: “Myrrhe”; al-Bīrūnī p. 304, no. 31; Ibn al-Quff no. 232; Flora I, pp. 305, 311; Diosc. Wellmann I, 66/Berendes I, 77: “Myrrhe . . . heilt mit Meconion, Bibergeil und Glauktion eiterflüssige und entzündete Ohren”; Diosc. Triumphans I, 27.

140 Vinegar: See note 118.

141 Pastilles: Ullmann, *Medizin* p. 298 *qurş*, Plur. *aqrāş*: “Pastille.”

Aetius (VI, 83); Alexander (II, p. 75); Paul (III, ch. 23, 3); SBM (II, p. 116) recommend the same remedy with minor variations, as the following table will show:

<i>Qusṭā</i>	<i>Aetius-Paul</i>	<i>Alexander</i>	<i>SBM</i>
20 almonds	20 almonds	20 almonds	24 almonds
4 d. borax	3 d. natron	1 d. natron	3 nitrepills
4 d. opium	3 d. opium	3 d. opium	3 d. opium
4 d. frankincense	3 d. frankincense	3 d. frankincense	3 d. frankincense
4 d. thistle	—	—	—
1 d. myrrh	1 d myrrh	1 d. myrrh	1 d. myrrh
—	2 d Galbanum	2 d. Galbanum	2 d. Galbanum
—	4 d crocus	4 d. crocus	4 d. crocus
vinegar	vinegar	vinegar	vinegar

142 Dāniq: = 3 carats; 1 carat = 0,2232 gram (Hinz *o.c.*, p. 27).

143 Oil of roses: See note 25.

A comparison with Aetius *l.c.*, Alexander *l.c.* and Paul *l.c.* may show the similarity in terminology and prescription:

<i>Qusṭā</i>	<i>Alexander</i>	<i>Aetius-Paul</i>
ان كان وجع الاذن شديدا يداف القرص بدهن الورد	χρῶ ἐπὶ μὲν περιωδυνί- ας σὺν ῥοδίνῳ	ὀδύνης μὲν οὐσης ῥοδίνῳ διείς

Translation:

<i>Qusṭā</i>	<i>Alexander</i>	<i>Aetius-Paul</i>
. . . when the earache is strong, one should mix the pastille with oil of roses.	Bei starken Schmerzen gebraucht man das Mittel mit Rosenöl.	When there is pain, one should dilute it with oil of roses.

SBM *l.c.* refers to the same prescription.

144 Oxymel: See note 19.

Aetius *l.c.* and Paul *l.c.* mention the same recipe, as a comparison shows:

<i>Qusṭā</i>	<i>Aetius</i>	<i>Paul</i>
وان كان يسيل من الاذن قيح ديف القرص بسكنجين او بعض الانبذة	πυορροούντων δὲ οἶνο- μέλιτι ἢ ὄξει καὶ ἐψημά- τι<διείς>	πυορροούντων δὲ οἶνο- μέλιτι ἢ ὄξυμέλιτι<διείς>

*Translation:**Qusṭā*

When purulent matter is flowing from the ear, the pastille should be mixed with oxymel or with some wine.

Aetius

When (the ears) are ulcerating (it should be diluted) with honey-wine or vinegar and must.

Paul

When (the ears) are ulcerating (it should be diluted) with honey-wine or oxymel.

145 Vinegar prepared from wine: See note 118.

Aetius, Alexander and Paul *l.c.* mention the same prescription:

Qusṭā

وان كان السمع ثقيلا
ديف القرص بخل
خمر

Aetius

δυσηκοίας δὲ
οὔσης σὺν ὀξεί.

Alexander

ἐπὶ δὲ δυσηκοίας
συν ὀξεί

Paul

δυσηκοούντων
δε ὀξεί

*Translation:**Qusṭā*

In the case of hardness of hearing the pastille should be mixed with vinegar prepared from wine.

Aetius

In the case of hardness of hearing (it should be diluted) with vinegar.

Alexander

bei Schwerhörigkeit gebraucht man das Mittel dagegen mit Essig.

Paul

In the case of hardness of hearing (it should be diluted) with vinegar.

The striking similarities among Alexander and Paul's prescriptions presented in this chapter clearly suggest that Paul was influenced by Alexander; cf. Diller (Pauly-Wissowa, *Realenzyklopädie*, p. 2396): "Aus eigener Lektüre hat Paulos auch Alexander von Tralleis gut gekannt"; and Sezgin, *GAS* III, p. 168 (Paulus von Aegina): "Die jüngste von ihm zitierte Autorität ist Alexander von Tralles." The close similarities between Paul and Qusṭā's terminology, prescriptions and structure of the whole chapter shows without doubt that Qusṭā made ample use of this particular source when compiling the chapter on earache. Assuming the validity of the theory expounded here, this chapter offers a concrete example of the major influence of one of the Byzantine doctors on Arabic medicine. According to Ullmann, *Medicine*, p. 14, so far this influence could not yet be assessed. And Sezgin, *GAS* III, p. 168 merely states that Paul's works were some of the major sources of Arabic medicine.

Another question to be considered is Qusṭā's choice of the material discussed by Paul, as he confined himself to ch. 23, 1 and 3, without referring to any other subject treated by Paul in the rest of his chapter.

This seems to suggest that Qusṭā, just like Paul in ch. 23, 1 and 3, only wanted to give a general introduction to earache, in which he discusses the most frequent kinds of earache, their causes and treatment. This supposition may be corroborated by the fact that Qusṭā's treatise was not intended for

the specialist, but for the layman, cf. his address to al-Ḥasan b. Maḥlad (11. 6–15).

Qusṭā's systematic, introductory discussion of this ailment, following Paul, is dissimilar to that of the other Arab authors whose treatment of the same subject falls within the scope of the present study, namely, aṭ-Ṭabarī, Pseudo Thābit, as-Rāzī and Ibn Sīnā (see note 70). This is also obvious from the lack of counterpart texts available from these authors throughout this chapter.

Chapter 6

- 146 The weather is an element belonging to the first topic of the *sex res non naturales*, namely, the "air around us"; see note 7 and Schipperges, *Arabische Medizin*, p. 54. Consequently the diseases caused by a change in the weather are treated in the literary genre of the *regimen sanitatis*, to which Qusṭā's text belongs.

Among the ancient authors these diseases were discussed by Hippocrates (Περὶ φύσων 10; Littré VI, pp. 104–8) and Galen (*De symptomatum causis* I, 11; Kühn VII, pp. 262–3). Among the Byzantine compilers they are treated by Alexander (II, p. 146 ff; on cough alone); Aetius (VIII, 57); Paul (III, ch. 28).

The traveller's *regimina* referred to in note 4 do not discuss these diseases, except for Ibn al-Jazzār (Bk. II, ch. 14; Bk. III, ch. 6). Aṭ-Ṭabarī, Pseudo Thābit and Ibn Sīnā treat them systematically in a special section of their work; cf. aṭ-Ṭabarī pp. 184–5, 228–35, 583; Pseudo Thābit ch. 12; Ibn Sīnā III, pp. 166–9.

- 147 The theory of the brain as the origin of superfluous phlegm was explicitly stated for the first time by Hippocrates, who avers (Π.α.υ.τ. 3; Littré II, p. 16) that the heads of inhabitants of regions where hot winds blow are full of moist phlegm, and that their stomachs are frequently deranged because of this phlegm which oozes from the head.

This theory was generally accepted and adhered to. Galen (*o.c.*; Kühn VII, p. 262) says that deflection to the nose and to the mouth originates from the brain. For similar statements see Paul (III, ch. 28); SBM (II, pp. 70–1); aṭ-Ṭabarī (p. 184); Ibn Sīnā (III, p. 166); Maimonides (*Regimen*, ch. IV, 12).

In the 16th century, even a sharp observer as Vesalius depicted four channels through which the secretion had to be transported from the brain to the nose and gullet.

It was only in the 17th century that this doctrine was definitely refuted by V.C. Schneider; see Hyrtl, *Das Arabische und Hebräische in der Anatomie*, pp. 32–4.

For a description of the different parts and functions of the brain see Qusṭā's *Risāla fī al-faṣl bayna ar-rūḥ wa an-naḥs* (Ed. G. Gabrieli, pp. 632–641); cf. Sudhoff, *Die Lehre von den Hirnventrikeln*, pp. 160–1.

- 148 For this conception of open passages between the brain and nose, cf. Hyrtl *o.c.*, p. 86: "Die Gerüche steigen durch die Sieblöcher unmittelbar zum Gehirn auf, so wie andererseits die *Excrementa cerebri* durch diese Löcher in die Nasenhöhle und in den Rachen ablaufen."

For its description in Galen and al-Majūsī see Wiberg, *The anatomy of the*

brain, pp. 90–1; De Koning (*Trois traités*, p. 668) gives the relevant passages from Ibn Sīnā.

- 149 Rheum: Lane III, p. 1240 *zūkām*: “catarrhus ad nares, rheum”; Kroner, *Zur Terminologie der arabischen Medizin*, p. 35: “Schnupfen, Nasenfließen.”

Hippocrates (Περὶ φουσῶν 10; Littré VI, p. 106) calls the moisture flowing to the nose κόρυζα; For a similar statement see Galen *o.c.*, *l.c.*; Aetius VIII, 57; Paul III, ch. 28, 1. Pseudo Thābit says: “What flows down to the nose is called *zūkām*.”

- 150 Defluction: Lane VIII, p. 3031 *nazla*: “Defluction.” Galen *o.c.*, *l.c.* calls the superfluous humour which flows to the mouth κατάρρους; Paul *l.c.* gives this name to the moisture which flows to the throat and palate.

Pseudo Thābit *l.c.* states: “That which flows down to the mouth is called *nazla*. Ibn Sīnā (III, p. 166) says: “Some call *nazla* that which streams from the brain to the throat and *zūkām* that which streams to the nose; others call both of these *nazla* and call *zūkām* the soft, salty fluid which streams through the nose at short intervals, so that it hinders breathing.”

- 151 Paul *l.c.* makes a similar statement, as will be clear from a comparison:

Qusṭā

وان كان انصبابها يتجاوز ذلك حتى يصير
الى قصبة الرئة وما يلي الصدر يسمى ذلك
نزلة الى الصدر. فان كان الفضل غليظا
لرجا كان منه سعال شديد يقذف معه
رطوبات فضليّة، وان كان الفضل دقيقا
مائيا احدث السعال الذي يسمى يابسا.

Paul

χρονίζοντος δὲ τοῦ νοσήματος καὶ
τοῦ ρεύματος εἰς τὰ κατὰ θώρακά τε
καὶ πνεύμονα φερομένου βῆχες αὐ-
τοῖς γίνονται κακοήθειες. καὶ διὰ
δυσκрасίαν δὲ πολλάκις ἡ βῆξ γί-
νεται ποτὲ μὲν θερμὴν, ὥς ἐν
πυρετοῖς, ποτὲ δὲ ψυχράν, ὥς ἐν
βορείοις καταστάσεσιν, ἥτις καὶ
ξηρὰ μᾶλλον ἐστὶ·

Translation:

Qusṭā

... and if it flows further down until it reaches the trachea and what is near the chest it is called “defluction to the chest.” If this residue is thick and viscous it causes a bad cough with which superfluous humours are ejected. If it is thin and watery it causes a cough which is called dry.

Paul

But if the disease continues for a long time and the fluxion is carried to the region of the chest and lungs, a bad cough arises in them. A cough often arises from dyscrasia as well, partly hot, as in fevers, and partly cold, as in northern temperatures; this one is also more dry.

Maimonides, *Regimen*, ch. 4, 12, speaks of the humours flowing to the trachea as causing a cough and hoarseness.

- 152 Fumigant: Ullmann, *Medizin* p. 296 *baḥūr*; al-Qalānīsī pp. 178–9: “Dampfmittel, Inhalation.”

- 153 Papyrus: Schmucker no. 567 *qartās*: “Papier von Papyrus nilotica (Cype-

raceae). Es kann wohl auch zugleich für die Stammpflanze stehen. Die häufige Form *qarātīs* is nicht arab. Plural, sondern eine noch mehr an die griech. Originalform angelehnte Bildung"; al-Bīrūnī p. 268, no. 29; Ibn al-Bayṭār IV, p. 17; Diosc. Wellmann I, 86/Berendes I, 115.

154 Crystalline sugar: al-Bīrūnī p. 185, no. 29; Maimonides no. 289; Flora I, p. 746 ff; see also note 14.

155 Storax: See note 50.

156 Yellow amber: WKAS p. 406 *kahrabā*, *kārabā*: "amber"; Schmucker no. 657; E.I.² IV, p. 445 s.v. *kahrubā* (M. Plessner); al-Bīrūnī p. 284, no. 47; Maimonides no. 47; Diosc. Wellmann I, 83/Berendes I, 110.

These fumigants are not mentioned by Paul (III, ch. 28, 2); SBM (II, pp. 71, 72); at-Ṭabarī (p. 85); Pseudo Thābit (ch. 12); Ibn Sīnā (III, p. 169).

Galen, *De simp. med. temp. ac fac.* VIII, 18 (Kühn XII, p. 131), states that burned papyrus has a drying quality and that storax is warming, softening and maturing and therefore good against a cough, catarrh and hoarseness.

157 Dressing: Ullmann, *Medizin*, p. 298 *ḍimāda*: "Pflaster, Umschlag, Salbe zum Aufschmieren bei Pflastern usw."; al-Qalānīsī pp. 188–90.

158 *Barbaros*: For the dressings indicated by this name see: Galen, *De comp. med. per genera* II, 22 (Kühn XIII, pp. 555, 557, 559). Galen, *Ad Glauconem de med. meth.* II, 10 (Kühn XI, p. 126), says that this name, the origin of which he does not know how to explain, refers to a kind of dressing distinguished by its percentage of asphalt.

Celsus (V, 19) says that the best plaster is the one called *barbarum*. Alexander (II, p. 197) mentions the *barbaros* as a remedy for pain in the chest occurring after spitting blood. Paul (VII, ch. 17, 42) gives the composition of the *barbaros* dressing.

159 *Athena*: See Galen, *De comp. med. per genera* II, 2 (Kühn XIII, p. 494); Paul VII, ch. 17, 40 gives its composition; Celsus V, 25 gives the composition of the pill of Athenion against a cough.

160 *Hikesios*: For its composition and application see Galen (*o.c.* V, 2; Kühn XIII, pp. 780–1); Paul VII, ch. 17, 45.

Qusṭā's advice to apply these dressings shows a remarkable similarity to Aetius (VIII, 57) and Paul (III, ch. 28, 2), as a comparison will show:

Qusṭā

فان اتصل الزكام ولم تنجع فيه
الروائح الزق على الجبهة الضماد
الذي يقال له بربار او الضماد
الذي يقال له اتينا او الضماد
الذي يقال له انكاسيوس،

Aetius

ἀφλέγμαντων δε ἐπι-
τιθέναι κατὰ τοῦ μετώ-
που, οἷον τὴν ἱκεσίους ἢ
τὴν ὀξηρὰν ἢ τὴν βάρ-
βαρον ἢ τὴν Ἀθηνᾶν.

Paul

ἐφ' οὗ καὶ μία τῶν ἀ-
φλεγμάντων ἐμπλάσ-
τρων κεκολλήσθω,
οἷον ἱκέσιος ἢ ὀξηρὰ ἢ
βάρβαρος ἢ Ἀθηνᾶ.

*Translation:**Qusṭā*

When the catarrh is lasting and the odorants are to no avail, one should apply to one's forehead the dressing called *barbaros* or the one called *athena* or the one called *hikesios*.

Aetius

Then one should put on the forehead (a plaster) effective against the inflammation, such as the one of *hikesios*, or the *oxera*, or the *barbaros*, or the *athena*.

Paul

Then one should apply (to the forehead) one of the plasters which are effective against the inflammation, such as the *hikesios*, or the *oxera*, or the *barbaros*, or the *athena*.

It seems clear that Qusṭā was influenced by Paul in his choice of these dressings. Though Aetius also refers to them, the influence of Paul is more likely in view of the close similarity between him and Qusṭā in the rest of this chapter.

Moreover Aetius' compilation was seemingly unknown to the Arabs, taking into account that neither biographers nor bibliographers mention it (see Ullmann, *Medizin*, p. 85), and that medical authors seldom cite from it (see Sezgin, *GAS* III, pp. 164–5).

Paul's compilation, on the other hand, was wellknown to the Arabs; it is often quoted and was one of the most important sources of Arabic medicine (see Sezgin *o.c.*, pp. 168–9; note 143).

Aṭ-Ṭabarī (pp. 184–5); Pseudo Thābit (ch. 12); Ibn Sīnā (III, pp. 166–9), not using Paul's compilation in their description of the treatment of catarrhs, do not mention these dressings.

Remarkable is the fact that while Qusṭā says that these dressings are so wellknown that it is not necessary to specify their composition, famous compilers like al-Majūsī and Ibn Sīnā do not even mention them in their list of different dressings; cf. al-Majūsī II 2, ch. 18; Ibn Sīnā V, pp. 406–7.

161 Ounce: = 12 dirham = 37,5 grams (in Egypt; Hinz, *o.c.*, pp. 34–5).

162 Storax: See note 50.

163 Storax of the monks: Maimonides no. 228: "There is a liquid kind also called *may⁶a ar-ruhbān* (storax of the monks), and a dry kind also called *iṣṭurak*"; see notes 50, 51 as well.

164 Mastix: Schmucker no. 730 *maṣṭakā*: "Mastix, Mastixharz von Pistacia lentiscus L. (Anacardiaceae), dem Mastixbaum"; al-Bīrūnī p. 306, no. 41; Maimonides no. 232; Ibn al-Quff no. 233; Flora I, pp. 195–8; Diosc. Wellmann I, 70/Berendes I, 90.

165 Mountain parsley: Schmucker no. 627 *karafs jabalī*: "Als Stammpflanze für den Bergsellerie gilt nach manchen Forschern Peucedanum oreoselinum (L.) MOENCH (Umbelliferae), den wir als Berg-Haarstrang zu benennen pflegen"; al-Bīrūnī p. 277, no. 9; Maimonides no. 196; Ibn al-Quff no. 217; Flora III, pp. 423–435; Diosc. Wellmann III, 65/Berendes III, 69; Diosc. Triumphans III, 62.

166 Red arsenic: Schmucker no. 346 *zirnīḥ*: "Arsenicum, Arsenik"; al-Bīrūnī p. 166, no. 13; Ibn al-Quff no. 112; Goltz pp. 239–241; Diosc. Wellmann V, 105/Berendes V, 121: "Sandaracha . . . mit Honigwein wird sie bei Lungengeschwüren gegeben und mit Harz als Räucherung gegen alten Husten

angewandt, indem der Dampf durch ein Rohr in den Mund gesogen wird.”

- 167 Laurel: Schmucker no. 511 *ġār*: “*Laurus nobilis* L. (Lauraceae), Lorbeerbaum, Lorbeer. Die Frucht wird arab. *ḥabb al-ġār* genannt”; al-Bīrūnī p. 244, no. 2; Maimonides no. 404; Diosc. Wellmann I, 78/Berendes I, 106; Diosc. Triumphans I, 46; cf. n. 95.

- 168 Honey: See note 119.

Paul (III, ch. 28, 13) mentions a similar remedy, as we will show by the next comparison:

Qusṭā

one ounce of storax
–
one ounce of mastix
one ounce of mountain parsley
half a dirham of red arsenic
2 “laurel nuts”

Paul

one ounce of storax
one ounce of pepper
one ounce of mastix
one ounce of parsley
1/4 ounce red arsenic
2 “laurel nuts”

Both authors also describe the same method of application of this remedy:

Qusṭā

وذلك بان يوضع منه شيء يسير على جمر
ويوضع عليه قمع حتى يجتمع البخار
فيؤديه الى الموضع الذي يقصد لعلاجه

Paul

κάπνιζε βαλὼν εἰς κάρβονας,
ὥστε τὸν βήσσοντα διὰ χωνίου
τὸν καπνὸν ἀναπνεῖν.

Translation:

Qusṭā

For that one has to put a small amount on burning coals and place a funnel over it so that the vapour can be collected.

Paul

One should use this as a fumigant by throwing it on coals, so that the one suffering from a cough can inhale its vapour by means of a funnel.

Galen, *De rem. par.* II, 13 (Kühn XIV, p. 441), mentions the same remedy as Paul.

For fumigants partly containing the same ingredients see: Alexander II, p. 181; aṭ-Ṭabarī p. 232; Pseudo Thābit ch. 12; Ibn Sīnā III, p. 232.

- 169 Syrup: See note 15.

- 170 Henbane: Schmucker no. 147 *banj*: “*Hyoscyamus niger* L., albus, aureus (Solanaceae), Bilsenkraut, Hühnertod, Zankteufel”; E.I.² I, p. 1014 *s.v. bandj* (M. Meyerhof); al-Bīrūnī p. 77, no. 32; Maimonides no. 58; Ibn al-Quff no. 34; Flora III, pp. 359–361; Diosc. Wellmann IV, 68/Berendes IV, 69; Diosc. Triumphans IV, 61.

171 Pine nut: Schmucker no. 462 *ṣanaubar*: “Pinus L. allg. (Pinaceae) und Kiefernzapfen”; al-Bīrūnī p. 207, no. 19; Maimonides no. 317; Ibn al-Quff no. 158; Flora III, pp. 40–47; Diosc. Wellmann I, 69/Berendes I, 86; Diosc. Triumphans I, 36, n. 2.

172 Myrrh: See note 139.

173 Inspissated grapes: Lane V, pp. 2106–7 *ʿaqīd*: “thick, or thickened, inspissated”; Pseudo Thābit p. 29: “Jelly of raisins”; al-Qalānisī p. 239: “Traubensaft.”

A comparative table shows the similarity of this syrup with the one mentioned by Alexander (II, p. 159) and Paul (III, 28, 5):

<i>Qusṭā</i>	<i>Alexander</i>	<i>Paul</i>
12 d. seed of henbane	12 d. seed of henbane	12 d. seed of henbane
6 d. pine nut	12 d. pine nut	6 d. pine nut
1 d. myrrh	5 d. myrrh	1 d. myrrh

They also refer to the same method of preparation of these ingredients:

<i>Qusṭā</i>	<i>Alexander</i>	<i>Paul</i>
ويعجن بعقيد العنب	ἐψηματι γλυκεῖ ἀνα- λάμβανε	ἐψηματι [ῆ] γλυκεῖ ἀνα- λάμβανε

Translation:

<i>Qusṭā</i>	<i>Alexander</i>	<i>Paul</i>
must be kneaded with inspissated grapes . . .	werden mit süßem Most vermischt . . .	have to be mixed with sweet must . . .

For syrups containing other ingredients see: Galen, *De comp. med. sec. locos* VII, 3 (Kühn XIII, p. 70); aṭ-Ṭabarī pp. 233–4; Pseudo Thābit ch. 12, p. 116; Ibn Sīnā III, pp. 168–9.

174 Thyme: al-Bīrūnī p. 119, no. 2 *ḥāshā*: “Either Thymus serpythem L. or T. vulgaris L. (Labiateae); Maimonides no. 157; Flora II, p. 204 ff; Diosc. Wellmann III 36/Berendes III, 38.

175 Honey: See note 119.

176 Butter: aṭ-Ṭabarī p. 444; Ibn al-Bayṭār III, p. 35; Ibn Sīnā II, p. 390; Diosc. Wellmann II, 72/Berendes II, 81.

177 Hyssop: Schmucker no. 356 *zūfā*: “Hyssopus officinalis L. (Labiateae), Ysop, oder eine Origanum L. Art (Labiateae), ein Dost”; al-Bīrūnī p. 170, no. 25; Maimonides no. 136; Flora II, pp. 72–3; Ibn al-Quff no. 120 *Ysop*: “Es verdünnt die dicken und zähen Substanzen. Wenn man seinen Absud zusammen mit Feigen trinkt, nützt das gegen Asthma, Atembeklemmung und chronischen Husten”; Diosc. Wellmann III, 25/Berendes III, 27; Diosc. Triumphans III, 27; see also next note.

178 Figs: Schmucker no. 180 *tīn*: “Ficus carica (Moraceae), Essbare Feige”;

al-Bīrūnī p. 97, no. 34; Ibn al-Quff no. 52; Flora I, pp. 224–254; Diosc. Wellmann I, 128/Berendes I, 183 *Feigen*: “Mit Hysop gekocht und getrunken reinigen sie die Brust, sind auch ein gutes Mittel bei alten Husten und chronischen Lungenleiden”; Diosc. Triumphans I, 107; see also previous note.

179 Pine: See note 171.

180 Lily: See note 47; Asaph (I, p. 50) states: “Sie nützt gegen Husten, weil durch sie viel Schleim und Blut ausgeworfen wird”; Ibn al-Quff no. 130 says: “Die Wurzel nützt hervorragend bei Atembeklemmung und beseitigt die Stoffe, die in den (verschiedenen Abschnitten der (Luft)-röhre festgehalten werden.”

181 Raṭl: = 437,2067 grams (see Hinz *o.c.*, p. 3).

182 Lohoch: Ullmann, *Medizin*, p. 299 *la‘ūq*: “Leckmittel, Lutschbonbon.” A comparison with Paul (III, ch. 28, 6) shows that he refers to the same recipe:

<i>Qusṭā</i>	<i>Paul</i>
5 d. honey	1 ounce of honey
5 d. butter	½ ounce of butter
2 d. hyssop	decoction from: hyssop
4 figs	decoction from: figs
10 d. pine	decoction from: pine
10 d. lily	decoction from: iris

For parallel remedies with partly the same ingredients see: aṭ-Ṭabarī p. 233; Pseudo Thābit ch. 12, p. 118; Ibn Sīnā III, p. 230; al-Qalānīsī (p. 158) mentions the “hyssop-lohoch”, consisting of dry hyssop, iris and honey.

As in the case of earache, this chapter is characterized by its similarity to Paul as regards description of the diseases, prescriptions and structure of the chapter. Once again it shows that Qusṭā was deeply influenced by Paul while compiling this chapter. As to the question why Qusṭā made this selection from the rich material offered by Paul, the answer must be the same as the one given in the previous chapter; see note 145. A comparison with the other Arab authors treating these diseases again offers the same picture as with ear diseases, namely, a striking dissimilarity.

Chapter 7

183 Eye diseases were widespread throughout the Arabian peninsula from pre-Islamic times until recently. For the early period evidence can be derived from the large number of expressions current in the Arab language to describe these diseases; cf. Ullmann, *Medicine*, p. 1. For more recent times see Patah, *o.c.*, p. 75.

The rich ophthalmological literature from the hand of Arab doctors shows clearly their singular achievements in this field; see the rich collection of material reprinted by Sezgin, *Augenheilkunde im Islam* (4 vls) and Ullmann’s survey (*Medizin*, ch. 7). Although essentially going back to Greek sources, Arabic ophthalmological literature is distinguished by a more complete and

a better systematic organisation of the material, and by a more exact description of the methods of operation.

The Arab oculists described diseases unknown to the Greeks, used new methods, new therapies and drugs; see the excellent survey by Hirschberg, *Geschichte der Augenheilkunde bei den Arabern*.

Eye diseases are also extensively treated in the traveller's regimen of Ibn al-Jazzār (Bk. 2, chs. 1–6). The other authors of this genre discussed this theme in separate treatises; see aṭ-Ṭabarī (pp. 161–175); ar-Rāzī (II); Pseudo Thābit (ch. 8); Ibn Sīnā (III, pp. 108–48).

- 184 Oribasius (*Synopsis* V, 27) mentions as a prophylaxis against poor vision: "To avoid cold, wind, smoke and dust"; Paul (I, ch. 31) mentions as a prophylaxis against the same disease: "To avoid cold, adverse winds, smoke and dust".

Ibn Sīnā (p. 112) states: "If someone wants to preserve the health of his eyes, he should protect them most of all from dust, smoke, extremely hot or cold draughts and from winds which are raw, cold or *samūm*-like."

Patah *o.c.*, p. 79, mentions dust as a major cause of eye diseases among pilgrims in Jiddah.

- 185 No counterpart or possible source of this statement about the influence of pure dust on the eyes could be found while researching this subject.
- 186 Ophthalmia: For its definition cf. Ḥunayn Ibn Ishāq (*The Book of the Ten Treatises on the Eye*, ed. and transl. by M. Meyerhof, p. 111): "Ophthalmia is a hot swelling, the seat of which is in the conjunctiva."

This definition, already formulated by Galen (*Ad Glauconem de med. meth.* II, 1; Kühn XI, p. 77), was generally accepted in Arabic ophthalmological literature; see, for instance, Ibn Sīnā (p. 113) and for the treatment of his sources: Hirschberg-Lippert, *Die Augenheilkunde des Ibn Sīnā*, p. 27 ff.

Ar-Rāzī (p. 96), citing Rufus, discussed the treatment of ophthalmia caused by smoke and dust; ar-Rāzī (p. 77), citing Qusṭā's *K. fī al-faṣḍ*, mentions a statement by Galen about the treatment of ophthalmia, consisting of bloodletting on the first day.

Qusṭā discusses the possibility of infection in the case of *ramad* (ophthalmia) in his *K. fī al-i'dāʾ* (Fähndrich p. 26, no. 43).

- 187 Collyrium: Ullmann, *Medizin*, p. 296 *barūd*: "Kühlendes Mittel."
- 188 Starch: Vullers II, p. 1315 *nishāsta*: "(unde ar. *nishāstaj*) amylum."
- 189 Wheat: Schmucker no. 257 *ḥinṭa*: "Triticum L. (Gramineae), eine Weizenart"; al-Bīrūnī p. 132, no. 80; Ibn al-Quff no. 82; Flora I, pp. 776–98; Diosc. Wellmann II, 85/Berendes II, 107; Diosc. Triumphans II, 68.
- 190 Gum Arabic: Schmucker no. 457 *ṣamḡ*: "Harz, Gummi"; al-Bīrūnī p. 206, no. 17; Ibn al-Quff no. 161; Maimonides no. 278; Flora II, pp. 377–91; Diosc. Wellmann I, 101/Berendes I, 133; Diosc. Triumphans I, 70.
- 191 White lead: Schmucker no. 31 *isfīdāj*: "Bleiweiss, ein basisches Bleikarbonat"; Maimonides no. 29; Goltz pp. 294–5; Siggel p. 76; Diosc. Wellmann V, 88/Berendes V, 103.
- 192 Cadmia: Schmucker no. 62 *iqḷīmiyā*: "Normalerweise gewinnt man diese Schlacke bei Verbrennungsprozessen (in Öfen, etc.) als Rückstand. Über diese *iqḷīmiyā*, *qalīmiyā* bzw. *qadmiyā* genannte Substanz herrscht grosse Unklarheit"; Ibn al-Quff no. 15; Maimonides no. 342; Goltz p. 130 ff; Siggel p. 77; Diosc. Wellmann V, 74/Berendes V, 84.

- 193 Stibnite: Schmucker no. 6 *ṭimid*: "Stibium, Schwefelantimon"; Maimonides no. 27; Löw, *Fauna und Mineralien*, p. 260 ff; Goltz p. 238; Siggel p. 76; Diosc. Wellmann V, 84/Berendes V, 99; for the interlinear note *sanki surma*, see Vullers II, p. 333: "Lapis ex quo collyrium paratur; native antimony."
- 194 Burned sea shells: See note 113; Hunayn *o.c.*, p. 115 mentions burned sea shells with their contents as a medicine for lachrymal abscess.
- 195 Pearls: Schmucker no. 687 *luʿluʿ*: "Perlen"; Ibn al-Quff no. 224: "Perlen werden hauptsächlich als Herzmittel und in Augenarzneien verwendet"; al-Birūnī p. 295, no. 24; Siggel p. 87.
- 196 Starch of wheat: See notes 188 and 189.
- 197 Stibnite: See note 193.
- 198 Indian tutti: Schmucker no. 178 *tūtiyā*: "Tutia, Pompholyx, Zinkoxyd, Zincum oxydatum, ZnO (Zincum oxydatum crudum, Nihilum album, Flores zinci, Lana philosophica)"; Ibn al-Quff no. 55 *Hüttenrauch*: "Es heilt Augengeschwüre"; Maimonides no. 382; Goltz p. 295; Siggel p. 78.
- 199 Dāniq: See note 142.
- 200 Camphor: See note 84.
- 201 White lead: See note 191.
- 202 Haematite: Schmucker no. 413 *shādanaj*: "Lapis haematites, Haematit, Blutstein"; Maimonides no. 369; Goltz p. 294; Siggel p. 82.
- 203 Marcasite: Schmucker no. 713 *marqashītā*: "Lapis pyrites, Pyrit"; Goltz p. 267; Siggel p. 88.
- 204 Pearls: See note 195.
- 205 Gum Arabic: See note 190.
- 206 Burned copper: Schmucker no. 763 *nuḥās*: "kupfer"; Maimonides no. 357; Ibn al-Quff no. 247; Goltz p. 262; Diosc. Wellmann V, 76/Berendes V, 87.
- 207 Habba: = 0,0446 gram (Hinz *o.c.*, p. 12).
- 208 Musk: Al-Bīrūnī p. 304, no. 33 *misk*: "musk"; Ibn al-Quff no. 239; Diosc. Triumphans IV, 68, n. 12: "Der Moschus kam im Altertum nicht vor und ist wohl von Rāzī in die Heilkunde eingeführt worden"; Qusṭā's *Risāla* is an earlier example of the introduction of this drug.
- The different ingredients, part of the collyria mentioned by Qusṭā, are also referred to by other authors as remedies for eye diseases. See Celsus, Bk. VI, 6; Galen, *De comp. med. sec. locos* IV, 6–8 (Kühn XII, pp. 725–803); Oribasius, *Coll. Med.* X, 23; Alexander II, pp. 7–69; Paul III, ch. 23, VII, ch. 16; at-Ṭabarī pp. 165–175; Pseudo Thābit ch. 8; Ibn Sīnā III, p. 415 ff; al-Qalānīsī ch. 41. The specific composition of their medicines, however, is never exactly the same as the one mentioned by Qusṭā. This fact is not so astonishing when one considers Celsus' remark (Bk. VI, 6, p. 193; transl. W.G. Spencer): "Now for this disease (ophthalmia) there are many salves (collyria) devised by many inventors, and these can be blended even now in novel mixtures, for mild medicaments and moderate repressants may be readily and variously mingled."
- The same holds good for the different liniments mentioned by Qusṭā.
- 209 Liniment: Ullmann, *Medizin*, p. 298 *ṭilāʿ*: "Mittel zum Aufstreichen, Pflaster, Salbe."
- 210 Myrrh: See note 139.
- 211 Aloe: Schmucker no. 452 *ṣabir*, *ṣabr*: "Aloe allg. (Liliaceae), Aloe vera u.a.";

- al-Bīrūnī p. 196, no. 66; Maimonides no. 318; Flora II, pp. 149–52; Diosc. Wellmann III, 22/Berendes III, 22 *Aloe*: “Sie entfernt mit Honig blutrünstige Stellen und Sugillationen unter den Augen. Sie bessert Augenkrätze und lindert das Jucken der Augenwinkel”; Asaph p. 170: “Ferner Aloe heilt, sowohl eingestreut, als auch aufgestrichen, das geschwollene Auge und vertreibt Verdunkelung und ist allen Augenleiden gut”; Diosc. Triumphans III, 23.
- 212 Horned poppy: Schmucker no. 695 *māmīlā*: “Wohl in erster Linie *Glaucium corniculatum* (L.) CURT. (Papaveraceae), Roter Hornmohn, oder *Glaucium flavum* CR., Gelber Hornmohn”; Ibn al-Quff no. 226: “Der gelbe *māmīlā*-Saft wurde hauptsächlich in Augencollyrien angewendet”; Asaph p. 176; Flora II, pp. 370–1; Diosc. Wellmann III, 86/Berendes III, 90; Diosc. Triumphans III, 81.
- 213 Lycium: Schmucker no. 246 *ḥuḍaḍ*: “Ein sehr vielseitiger Terminus, der aber meist von *Rhamnus infectorius* L. (Rhamnaceae), *Berberis lycium* (!) und Verwandten, jedoch auch von deren Saft und Extract gebraucht wird”; Ibn al-Quff no. 71 “Lyciumsaft nützt gegen Augenentzündung”; Maimonides no. 148; Diosc. Wellmann I, 100/Berendes I, 132; Diosc. Triumphans I, 69.
- 214 Saffron: See note 81.
- 215 Opium: See note 136.
- 216 Acacia: Schmucker no. 61 *aqāqiyā*: “*Acacia arabica* Willd. var. *nilotica* Del.”; al-Bīrūnī p. 37, no. 80; Maimonides no. 12; Diosc. Wellmann I, 101/Berendes I, 133; Diosc. Triumphans I, 70.
- 217 Armenian bole: Schmucker no. 476 *ṭīn armanī*: “Armenischer Ton”; Ibn al-Quff no. 163; Maimonides no. 172; Goltz p. 254; Siggel p. 84.
- 218 Black nightshade: Schmucker no. 501 *‘inab at-ta‘lab*: “*Solanum nigrum* L. (Solanaceae), Schwarzer Nachtschatten”; Asaph p. 160 *Solanum nigrum*: “Aufgelegt nützt es auch gegen Augenleiden im Sommer”; Ibn al-Quff no. 170; Flora II, pp. 379–80; Diosc. Wellmann IV, 70/Berendes IV, 71; Diosc. Triumphans IV, 63.
- 219 Myrrh: See note 139.
- 220 Saffron: See note 81.
- 221 Opium: See note 136.
- 222 Henbane seed: See note 170.
- 223 Frankincense: See note 137.

Chapter 8

- 224 Hippocrates had already stated (Π.α.υ.τ. 1) that whoever wishes to properly pursue the science of medicine must consider the properties of the waters, since their influence on health is very great. Accordingly, he discussed this subject in the above-mentioned treatise (chs. 7–9; Littré II, pp. 26–42).

Galen devoted a commentary to this work by Hippocrates, which he also very often quoted and recommended; see Wasserstein, *Galen's Commentary on the Hippocratic Treatise Airs, Waters, Places*, p. 4, n. 6.

Other ancient authors paid attention to this treatise as well. Parallel material can be found in Rufus, Oribasius and Paul; see Diller, *Die Überlieferung*, p. 136 ff.

Galen's commentary was well-known and quoted in antiquity, e.g. by Oribasius; see Wasserstein *o.c.*, p. 5, n. 9; Ullmann, *Medizin*, p. 34.

Hippocrates' text was probably transmitted together with Galen's notes; see note 65 and Diller *o.c.*, p. 155 for a confirmation of this supposition. The Greek text of this commentary by Galen has been lost. It was, however, still available in Baghdad when it was translated into Syriac by Hunayn Ibn Ishāq and into Arabic by his nephew Ḥubayš; see Ullmann *l.c.*, p. 34. This translation, still in manuscript, was used by many authors, such as aṭ-Ṭabarī and Pseudo Thābit; see Wasserstein *o.c.*, p. 6, Ullmann, *Medizin*, p. 61. This Arabic text was translated into Hebrew in the 13th century by Solomon ha-Me'ati and has been edited by Wasserstein *o.c.*

For the importance of water during the pilgrimage to Mecca, and particularly its bad quality even in more recent times, see Burton, *Personal Narrative of a Pilgrimage* II, p. 90. Patah, *De medische zijde van de bedevaart naar Mekka*, pp. 2–4, describes the bad quality of water in Jiddah, in which he found cyclops, host of the *dracunculus medinensis* (cf. *Risāla*, chs. 13, 14).

The traveller's *regimina* mentioned in note 4 do not give an exposition of the different kinds of water in this chapter, as Qusṭā does; this subject is, however, discussed in other parts of their works. See aṭ-Ṭabarī pp. 501–6, 568; ar-Rāzī XXI 2 pp. 521–53; and Ibn Sīnā I, pp. 98–101; II, 363–4.

25 Hippocrates (Π.α.υ.τ. 7–9; Littré II, pp. 26–42), distinguishing between several kinds of water, does not give a definition of the best water in general, but states that rainwater is the lightest, sweetest, finest and clearest (*o.c.* 8; Littré II, p. 32). In his Aphorisms, however, he says that the lightest water is that which quickly gets hot and quickly gets cold (V, 26; Littré IV, p. 542).

Rufus (pp. 341–2) makes the same statement as Hippocrates about rainwater.

Galen makes the following relevant statements with regard to a definition of the best water:

1. Criteria for pure water are its taste, colour and odour (*De simp. med. temp.* I, 5; Kühn XI, p. 390).
2. The best water is that which has neither taste nor odour (*De sanitate tuenda* I, 11; Kühn VI, p. 56; Koch p. 26).
3. The best water is that which quickly gets hot, but also cold (*Hipp. Aph. et Gal. in eis comm.* 26; Kühn XVIIB, p. 814 ff.).

Oribasius (*Coll. Med.* V, 1) says that Galen's definition of the best water as being colourless and odourless is, in fact, the same definition as the one given by Hippocrates in his Aphorisms.

Paul (I, ch. 50), like Galen (*De sanitate tuenda* I, 11; Kühn VI, p. 56; Koch p. 26), says that the best water is that which has neither taste nor odour; he also says that he does not agree with some people who think that lightness is a criterion for better water. According to him, this obtains only when other criteria, such as taste and odour, are also met with; this last statement of Paul has a close parallel in Qusṭā (see variant reading MSS B, C, D to 1. 310).

Aṭ-Ṭabarī (pp. 540–6), ar-Rāzī (pp. 532, 536, 537) and Ibn Sīnā (pp. 99–101) give an exposition of the different kinds of water and their qualities, which is clearly derived from Hippocrates' Π.α.υ.τ. 7–9.

Qusṭā's definition of the best water as being tasteless, odourless and

- colourless is basically the same as that of Paul and Galen; he only adds the criterion of colour, which is implicit in Galen's statement, as cited above.
- 226 Sulphur: WKAS I, p. 28 *kibritun*: "Sulphur"; Schmucker no. 618; Goltz p. 278.
- 227 Borax: See note 120.
- 228 Bitumen: Schmucker no. 586 *qufr yahūdī*: "Asphalt, Judenleim, Judenpech, Erdpech"; Ibn al-Quff no. 211; Maimonides no. 168; Diosc. Wellmann I, 73/Berendes I, 99; Diosc. Triumphans I, 38.
- 229 Natron: See note 122.

For the bad quality of water mixed with these elements see Hippocrates Π.α.υ.τ. 7 (Litré p. 28); he states that absolutely bad are those waters originating from the earth which contain any of the following: iron, copper, silver, gold, sulphur, alum, bitumen or soda. A similar statement is made by Rufus (pp. 298, 344). Oribasius (*Coll. Med.* V, 3) and Aetius (III, 65) both quote Rufus.

Galen (*De simp. med. temp.* I, 12; Kühn XI, p. 393; commentary on Hippocrates' Π.α.υ.τ. p. 53), though admitting that all these waters are bad, nevertheless considers them as beneficial in the case of certain diseases.

Like Galen, aṭ-Ṭabarī (p. 505) and ar-Rāzī (p. 542) refer both to the bad and to the good qualities of these waters; ar-Rāzī (p. 542) cites Hippocrates' statement. Ibn Sīnā (p. 100) says that waters mixed with these elements are all very bad, though some are beneficial, especially those containing iron.

Qusṭā, not referring to the positive qualities of waters containing these elements, makes a statement similar to that of Hippocrates.

- 230 Hippocrates (Π.α.υ.τ. 7; Litré II, pp. 28–30), saying that bad waters are difficult to pass and cause constipation, implicitly states the same. For a similar statement see: Rufus p. 345; Galen, commentary on Hippocrates' Π.α.υ.τ. pp. 19, 53; Oribasius, *Coll. Med.* V, 1 (citing Galen); Aetius III, 165 (citing Rufus); Paul I, ch. 50; ar-Rāzī p. 524; Ibn Sīnā p. 98.
- 231 Hippocrates only gives this indication for the lightest water; see note 225. Rufus (p. 298) says that water of a good quality quickly gets cold, but also warm. For a similar statement see: Galen, *De ptisana liber 2* (Kühn VI, pp. 818–9; Hartlich p. 456); Galen, commentary on Hippocrates' Π.α.υ.τ. p. 19; Oribasius, *Coll. Med.* V, 1 (citing Galen); Aetius III, 165 (citing Rufus); Paul I, ch. 50; aṭ-Ṭabarī p. 504; Ibn Sīnā p. 98; Maimonides, *Medical Aphorisms* II, p. 69.
- 232 Hippocrates (Π.α.υ.τ. 7; Litré II, p. 30) makes a similar statement about those waters which flow from high places and earthly hills and originate from the deepest sources; cf. Rufus pp. 298, 506–7; Galen, *De simp. med. temp.* III, 8 (Kühn XI, p. 555), commentary on Hippocrates' Π.α.υ.τ. pp. 22–3; Oribasius, *Coll. Med.* V, 3 (citing Rufus); Aetius III, 165 (citing Rufus); aṭ-Ṭabarī p. 504; ar-Rāzī p. 537; Ibn Sīnā p. 98.

Neither Paul (I, ch. 50) nor Qusṭā refers to the origin of these waters.

- 233 Hippocrates (Π.α.υ.τ. 8; transl. Jones p. 91) states: "Rainwaters are the lightest, finest and clearest. To begin with, the sun raises and draws up the finest and lightest part of water"; cf. Rufus p. 341; Galen, commentary on Hippocrates' Π.α.υ.τ. pp. 56, 57; Oribasius, *Coll. Med.* V, 1 (citing Galen); Aetius III, 165 (citing Rufus).

Paul (I, ch. 50) cites only the first part of Hippocrates' statement about

rainwater, without saying why; cf. aṭ-Ṭabarī p. 504; ar-Rāzī p. 536 and Ibn Sīnā p. 98.

- 234 Hippocrates (Π.α.υ.τ. 8; transl. Jones p. 93) states: "Waters from snow and ice are all bad. For, once frozen, water never recovers its original nature, but the clear, light, sweet part is separated out and disappears, while the muddiest and heaviest part remains." For a similar pronouncement see: Rufus p. 298; Galen, *Hipp. de hum. liber* III, 4 (Kühn XVI, p. 365), commentary on Hippocrates' Π.α.υ.τ. p. 65; Oribasius, *Coll. Med.* V, 1 (citing Galen); Aetius III, 165 (citing Rufus); Paul I, ch. 50; aṭ-Ṭabarī p. 504; ar-Rāzī p. 547; Ibn Sīnā p. 99; Maimonides, *Medical Aphorisms* II, 69.

Bussemaker-Daremborg (Oribasius pp. 624–5) refer to ancient authors who do not consider the water originating from snow as bad. As proof they cite Celsus (II, 18; transl. Spencer p. 199): "Rainwater is the lightest, next water from a river, then from a well, after that from snow or ice; heavier still is water from a lake, the heaviest from a marsh." However, this citation seems to prove exactly the opposite, namely, that the water obtained from snow or ice, being heavy, is equally bad. The quotation from Theocritus on the other hand shows that Bussemaker-Daremborg are right in assuming that there were authors who considered this kind of water as wholesome.

Reviewing the above-mentioned traditions about the different water, it is clear that Hippocrates' treatise Π.α.υ.τ. 7–9 played a central part, just as in the case of the different winds (see note 65). Only twice are his views modified, for the first time by Galen, who, contrary to Hippocrates, gives a definition of the best water in general and who, unlike Hippocrates, holds that water mixed with certain minerals can be wholesome in the case of certain diseases.

Qusṭā gives a definition of the best water which is similar to that of Galen and of Paul; unlike Galen, but like Hippocrates, Qusṭā thinks that water mixed with certain minerals is only detrimental.

Chapter 9

- 235 The subject of the improvement of contaminated water is also treated in the traveller's *regimina* of ar-Rāzī and Ibn Sīnā. It is a central theme in those of aṭ-Ṭabarī and Pseudo-Thābit, who devote half of their treatises to this theme alone. This shows how bad the quality of water must have been in their days.
- 236 Hippocrates (Π.α.υ.τ. 8; Littré II, p. 34) only states about rainwater that it, though being the best, should be boiled and purified from foulness. Rufus (p. 344) says that the best water is that which has been boiled, cooled and boiled again.

Galen (*Hipp. Epid. VI et Gal. in illum comm. IV*; Kühn XVIIIB, p. 156) says that bad water must be boiled before being drunk.

Oribasius (*Coll. Med.* V, 3) and Aetius (III, 65) quote Rufus' statement; for another statement by these authors see note 239.

Aṭ-Ṭabarī (p. 111) recommends to the traveller to boil foul water, followed by a treatment of different ingredients; Ibn Sīnā (p. 186), saying that the consumption of different kinds of water does more harm to the traveller than the consumption of different kinds of food, states that water must be:

1. clarified, 2. filtered, 3. boiled, 4. distilled, 5. cleared by suction. Ar-Rāzī

- (XXI 2, p. 525), referring to a tradition from Hippocrates, states that bad water must be boiled, cooled, made lukewarm and drunk.
- 237 Wine: Diosc. Wellmann V, 6/Berendes V, 7–15; Ibn al-Bayṭār II, pp. 69–76.
- 238 Juice: Freytag I, p. 43 *afsharaj*: “Pers. Succus ex plantis praesertim fructibus, vinum quod ita conficitur”; Vullers I, p. 113b *afshura(g)*: “res quaevis expressa, succus expressus.”
- 239 Oribasius (*Ad Eunapium* I, 14) and Paul (I, ch. 50) make a similar statement, as a comparison will show:

Qusṭā

ينبغي أولاً ان يطبخ (المياه الفاسدة) طبخاً
صالحاً، اعني ان يغلي على النار وان يمزج
بعد الطبخ ببعض الانبذة او الافشراجات،
وان يكون ما يمزج به من الانبذة في ضد
طعم الماء. فان كان طعم الماء مائلاً الى
القبض والبشاعة مزج بنبذ حلو وان كان مائلاً
الى الملوحة مزج بنبذ قابض الطعم .

*Translation:**Qusṭā*

One must first of all boil (this contaminated water) well, I mean on a fire; then when it boils one must mix it with some wine or juice. The taste of the wine used for mixing must be contrary to that of the water. If the taste of the water tends towards astringency and bitterness, it must be mixed with sweet wine; but if it tends towards saltiness, it must be mixed with wine astringent of taste.

Oribasius, Paul

καλῶς δ' ἂν ἔχοι τὰ τε ἰλυώδη καὶ
δυσώδη καὶ τὰ ποιότητος ἀτόπους
ἔχοντα ταῖς ἐψησέσιν ἐπὶ τὸ βέλτιον
τρέποντας οὕτω πίνειν καὶ κεραν-
νύντας οἶνω τὰ μὲν στύφοντα τῷ
γλυκυτέρῳ, τὰ ἄλλα δὲ τῷ στρυφ-
νοτέρῳ.

Oribasius, Paul

Water which is muddy and stinking or water having peculiar properties can be made fit to be drunk by cooking it and mixing it with wine, namely, astringent (water) with sweet (wine) and the rest with astringent (wine).

- 240 Paul *l.c.* mentions a similar treatment for muddy and salty waters, Oribasius *l.c.* only for salty waters:

Qusṭā

وما كان من المياه غليظاً من
كدورة فيه فينبغي ان يصقّى
مراراً حتى يصفو وتذهب عنه
كدورته. فان جعلت الاسوقه
احد ما يصقّى به كان ذلك
صالحاً

Oribasius

τὰ δὲ που καὶ διηθεῖν
συμφέρει τὰ ἰλυώδη, τὰ
δ' ἄλυκα καὶ ἀλφίτοις
ἡθεῖν

Paul

τινὰ δὲ καὶ ἡθεῖν συμ-
φέρει, τὰ ἰλυώδη δὲ καὶ
ἄλυκα καὶ ἀλφίτοις
ἡθεῖν.

*Translation:**Qusṭā*

And the water which is thick because of turbidity in it must be strained several times until it is pure, without turbidity. If the meal of wheat, barley or vetches is one of the (means) used to purify the water with, it is good.

Oribasius

For some waters, namely, muddy waters, it is also useful to strain them; and for salty waters it is also useful to strain them with meal of barley.

Paul

For some waters it is also useful to strain them; and for muddy and salty waters it is also useful to strain them with meal of barley.

- 241 Meal of wheat: See note 11; for a similar recipe from Oribasius and Paul see previous note; ar-Rāzī (XXI 2, p. 533) recommends meal of wheat for turbid water (citation from Ibn Māsawayh).
- 242 For a similar statement see the traveller's *regimina* of aṭ-Ṭabarī (p. 110); ar-Rāzī (p. 217) and Ibn Sīnā (p. 184).
- 243 Chickpeas: Schmucker no. 253 *himmiṣ*: "Cicer arietinum, Kichererbse, Kicher"; al-Bīrūnī p. 129, no. 70; Asaph p. 88; Flora II, p. 427 ff.; Diosc. Wellmann II, 104/Berendes II, 126; Diosc. Triumphans II, 88.
- 244 Fennel: Schmucker no. 318 *rāziyānāj*: "Anethum foeniculum (Umbelliferae), Fenchel"; Maimonides no. 351; Ibn al-Quff no. 103; Flora III, pp. 460–5; Diosc. Wellmann III, 70/Berendes III, 74; Diosc. Triumphans III, 66.
- 245 Gourd: Schmucker no. 569 *qarʿ*: "Cucurbita maxima DUCH., Melonenkürbis"; al-Bīrūnī p. 267, no. 24; Ibn al-Quff no. 198; Asaph p. 90; Maimonides no. 332; Diosc. Wellmann II, 134/Berendes II, 161; Diosc. Triumphans II, 116.
- 246 Beet: Schmucker no. 243 *silq*: "Beta vulgaris L. (Chenopodiaceae), Mangoldrübe"; al-Bīrūnī p. 187, no. 35; Ibn al-Quff no. 127; Flora I, pp. 346–52; Diosc. Wellmann II, 123/Berendes II, 149; Diosc. Triumphans II, 105; MS A i.m.: *čugundur*; cf. Vullers I, p. 581: "res nota (sec. F. genus rapi vel betae rubrae quam pultibus indere solent)."
- 247 Wild amaranth: Schmucker no. 134 *baqla yamānīya*: "Amaranthus blitum L. (Amaranthaceae), Spinat-Fuchsschwanz"; Maimonides no. 53; Diosc. Wellmann II, 117/Berendes II, 143; Diosc. Triumphans II, 100.
- 248 Celery: WKAS I, p. 135 *karafsun*: "celery (Apium graveolens L.)"; Schmucker no. 627; al-Bīrūnī p. 277, no. 9; Ibn al-Quff no. 217; Maimonides no. 196; Flora III, pp. 423–35; Diosc. Wellmann III, 64/Berendes III, 69; Diosc. Triumphans III, 61.
- 249 Dill: Schmucker no. 420 *shibitt*, *shibitt*: "Anethum graveolens L." (Umbelliferae), ein Dill, "Gurkenkraut"; al-Bīrūnī p. 348, no. 12; Maimonides no. 363; Diosc. Wellmann III, 58/Berendes III, 60; Diosc. Triumphans III, 56.
- 250 Endive: Schmucker no. 789 *hindabāʾ*: "Cichorium endivia L., Endivie"; al-Bīrūnī p. 330, no. 18; Ibn al-Quff no. 250; Maimonides no. 114; Flora I, p. 415 ff.; Diosc. Wellmann II, 132/Berendes II, 159; Diosc. Triumphans II, 114.

- For similar recipes to improve the quality of bad water see the traveller's *regimina* of aṭ-Tabarī (p. 111); ar-Rāzī (pp. 221–2); Pseudo Thābit (p. 350); Ibn Sīnā (p. 186); see also Oribasius, *Ad Eunapium* I, 14; Paul I, ch. 50.
- 251 Acorn: Schmucker no. 143 *ballūt*: “*Quercus ilex* L. (Fagaceae), Steineiche (immergrün)”; al-Bīrūnī p. 75, no. 27; Maimonides no. 42; Flora I, p. 612; Diosc. Wellmann I, 106/Berendes I, 144; Diosc. Triumphans I, 75.
- 252 Sweet chestnut: Schmucker no. 415 *shāhballūt*: “*Castanea vesca* (Fagaceae), Edelkastanie”; al-Bīrūnī p. 345, no. 4; Flora I, pp. 612–6; Diosc. Wellmann I, 106/Berendes I, 145; Diosc. Triumphans I, 76.
- 253 Turpentine tree: Schmucker no. 226 *ḥabba ḥaḍrā*: “*Pistacia terebinthus* (Anacardiaceae), Terebinthe”; al-Bīrūnī p. 120, no. 6; Ibn al-Quff no. 79; Maimonides no. 66, 156; Flora I, pp. 191–5; Diosc. Wellmann I, 71/Berendes I, 91.
- 254 Sesame: Schmucker no. 402 *simsim*: “*Sesamum orientale* L. (Pedaliaceae)”; al-Bīrūnī p. 191, no. 47; Asaph p. 84; Flora III, pp. 1–8; Diosc. Wellmann II, 99/Berendes II, 121; Diosc. Triumphans II, 83.

From the fact that Paul's words are exactly the same as Oribasius when recommending different means to improve contaminated water (see especially note 240), the conclusion follows that Paul copied this source *verbatim*. For the influence of Oribasius on Paul see Diller (Pauly-Wissowa, *Realenzyklopädie* p. 2389): “Dass die ersten beiden Bücher (of Paul) sich besonders eng an Oreibasios und damit an die von ihm kompilierten Lehren der Älteren halten, erklärt sich aus dem mehr grundsätzlichen Charakter der Bücher über Hygiene und Fieberlehre; die Medizin der Spätantike ist auf diesen Gebieten stark traditionsgebunden.”

The similarity between Qusṭā and these Byzantine compilers (esp. note 240) suggests that Qusṭā was influenced by this source. Since Qusṭā made ample use of Paul's works in other chapters of his *Risāla* (see chs. 5, 6, 11, 12, 14), it is most likely that the same obtains for this chapter.

Chapter 10

- 255 This subject is also treated in the traveller's *regimina* of aṭ-Tabarī (p. 110); ar-Rāzī (pp. 212–3, 223); Ibn Sīnā (pp. 183–4). They lack, however, the physiological description of the causes of thirst as given by Qusṭā. Pseudo Thābit (p. 157) and Ibn Sīnā (III, p. 320) discuss these causes in a special chapter.

Ancient authors, such as Galen (Kühn XX, index *s.v.* sitis); Oribasius (*Synopsis* VI, 37–39); Alexander (II, pp. 263–7); Aetius (V, 123) and Paul (II, ch. 52), already devoted much attention to this theme.

- 256 Galen refers to the following causes of thirst:
1. lack of moisture in the stomach (*De simp. med. temp.* I, 32; Kühn XI, p. 437; *Hipp. de hum. liber* I, 18; Kühn XVI, p. 173).
 2. abundance of heat in the stomach (*o.c.*, *l.c.*).
 3. burning fever (*De simp. med. temp.* I, 32; Kühn XI, p. 437).
 4. heat in liver, lungs and intestines (*De locis affectis* VI, 3; Kühn VIII, p. 401).

Oribasius (*o.c.* VI, 37) discusses thirst arising from dryness in the gullet, which brings the moisture from the mouth to the belly, and thirst arising

from drinking wine. He also discusses thirst caused by fevers (*o.c.* VI, 38).

Alexander (II, p. 262) refers to the same causes as Galen. As a possible cause of continuous thirst, Paul (*l.c.*) mentions dryness or heat in the organs which bring the moisture from the mouth to the stomach; he also refers to fevers and wine, though not as explicit causes. Pseudo Thābit (p. 157) states that excessive thirst is caused by heat and/or dryness arising from:

1. the heat in the stomach (its symptoms are dryness of gullet, throat and mouth).
2. the heat in the heart and lungs.
3. excessive hot weather and fasting.

Ibn Sīnā (III, p. 320) mentions the same causes as Galen, while adding others such as the drinking of wine, physical exercise and fatigue.

A comparison of the above-mentioned traditions with Qusṭā shows that Qusṭā's description of causes of thirst is similar to that of Oribasius and Paul.

257 See previous note.

258 Ibn Sīnā (I, p. 184) advises the traveller suffering from thirst to abstain from fish, capers, salty things and sweets.

259 Ar-Rāzī (p. 213) and Ibn Sīnā (p. 184) advise the traveller suffering from the *samūm* to put rose-oil on his head as part of a more comprehensive treatment. Pseudo-Thābit (p. 157) advises someone suffering from thirst caused by extremely hot weather or by fasting to cool his hands and feet and to pour rose-oil on his head. Oribasius (*o.c.* VI, 38, citing Philomenus); Aetius *l.c.* and Paul *l.c.* say that a good remedy for thirst arising from fevers is to pour rose-oil or any cold oil over the head.

260 Oil of roses: see note 25.

261 Lettuce: Schmucker no. 270 *hass*: "Lactuca sativa L. (Compositae), Garten-Lattich"; al-Bīrūnī p. 144, no. 36; Ibn al-Quff no. 87; Diosc. Wellmann II, 136/Berendes II, 164; Diosc. Triumphans II, 119.

262 Licorice: Schmucker no. 409 *sūs*: "Glycyrrhiza glabra (Astragaleae der Papilionaceae), Süßholz"; Ibn al-Quff no. 136; Flora II, pp. 435–7; Diosc. Wellmann III, 5/Berendes III, 5.

263 Cucumber: Schmucker no. 562 *qittā*: "Cucumis flexuosa (Cucurbitaceae), Schlangengurke"; al-Bīrūnī p. 264, no. 10; Maimonides no. 343; Flora I, p. 528 ff.; Diosc. Wellmann II, 135/Berendes II, 162; Diosc. Triumphans II, 117.

The same remedy is mentioned by Oribasius (*Synopsis*, VI, 38), Aetius (V, 123) and Paul (II, ch. 52); Oribasius and Paul use the same terminology, while that of Aetius is slightly different, as a comparison will show:

Qusṭā

واقوى ما يستعمل في ذهاب
العطش ان يلاك بزر الخس
الاسود واسل السوس وبزر
القثا، كل ذلك اذا امسك
في الفم وليث وقتا طويلا
اذهب العطش.

Oribasius, Paul

κάλλιστα δὲ ποιεῖ πρὸς
δίψος τὸ τῆς μελαίνης
θρίδακος σπέρμα δια-
μασηθὲν καὶ ἡ γλυκύ-
ριζα λεγομένη καὶ τὸ
τοῦ σικύου σπέρμα
διακρατηθὲν ἐν τῷ στό-
ματι

Aetius

πάντων δὲ ἁμεινον ποιεῖ
τὸ τῆς θρίδακος σπέρ-
μα διαμασηθὲν καὶ ἡ
γλυκεῖα λεγομένη ρίζα
καὶ τὸ τοῦ σικύου σπέρ-
μα. δεῖ δὲ μετὰ τὴν τῶν
τοιούτων διαμάσῃσιν
διακομίζεσθαι καὶ ἀνα-
γαγαρίζεσθαι

*Translation:**Qusṭā*

The most effective cure to take away thirst is to chew black lettuce-seed, licorice root, or the seed of cucumber; all these (drugs) eliminate thirst when kept in the mouth for a long time.

Oribasius, Paul

Most effective against thirst is to chew black lettuce-seed, or the so-called licorice root, or to keep the seed of cucumber in one's mouth.

Aetius

More effective than anything (against thirst) is to chew lettuce-seed, or the seed of cucumber. After chewing any of these (ingredients) one should keep them in one's mouth and gargle.

It is clear from this comparison that Qusṭā's version is closer to those of Oribasius and Paul than to Aetius' version. Galen (*De comp. med. sec. locos* VIII, 3; Kühn XIII, p. 145; *De rem par.* I, 10; Kühn XIV, p. 371) and Alexander (II, p. 265) mention the same ingredients, in addition to other ones for pastilles to be kept in the mouth.

264 Pastilles: See note 141.

265 Cucumber: See note 263.

266 Gum tragacanth: WKAS I, p. 547 (68 a 3) *kaṭīrā*: "tragacanth, gum resin from some kinds of astragalus (also term for the plants themselves)"; Schmucker no. 621; Ibn al-Quff no. 215; Maimonides no. 191; Flora II, pp. 419–424.

267 White of eggs: See note 107.

The same remedy is mentioned by Galen (*o.c.*, *l.c.*); Oribasius (*o.c.* VI, 39; referring to Dioscurides); Aetius (*l.c.*; referring to Dioscurides); Alexander (II, p. 265) and Paul (*l.c.*).

A comparative table shows the close similarity between the above-mentioned authors:

Qusṭā

يداف الكثيراً ببياض البيض
الطري فاذا ذاب سحق
بزر القثا المقشّر والقي عليه
ويتخذ منه اقراص ويجفف
في الظلّ وامسك في الفم
تحت اللسان فكّلما ذاب
منه شيء ازدرد

Paul

διάλυε τὴν τραγάκαν-
θαν ὥων ὥμων προσ-
φάτων τῷ λευκῷ, καὶ
ὅταν διαλυθῇ, ἐπιβάλλε
τρίψας τῷ σικυοσπέρ-
μῳ (τὸ σικυόσπερμα D)
προλειωθέντι (om. D)
καὶ μαλάξας ἀνά-
πλαττε καταπότια καὶ
ξήραινεν ἐν σκιᾷ καὶ
δίδου ἐν ὑπὸ τὴν γλῶσ-
σαν κατέχειν, καὶ τὸ
διαλυόμενον ὑγρὸν
καταπινέτω.

Oribasius, Galen

διάλυε τὴν τραγάκαν-
θαν ὥων ὥμων προσφά-
των τῷ λευκῷ, καὶ ὅταν
διαλυθῇ, ἐπιβάλλε τρί-
ψας τοῖς λοιποῖς (τοὺς
λοιπούς A), καὶ μίξας
ἀνάπλαττε καταπότια,
καὶ ξήραινεν ἐν σκιᾷ, καὶ
δίδου ἐν ὑπὸ τὴν γλῶτ-
ταν κατέχειν καὶ τὸ δια-
λυόμενον ὑγρὸν κατα-
πίνειν.

*Translation:**Qusṭā*

The gum tragacanth must be mixed with the fresh white of eggs; when this is melted, one should pound the husked seed of cucumber and add this; from this one must prepare the pastilles and dry them in the shade. In case of need one should take a pastille, keep it in one's mouth under one's tongue and swallow what melts . . .

Paul

The gum tragacanth must be dissolved in the white of fresh, raw eggs; when dissolved, one must pound and add the seed of cucumber (MS D). When this has been turned into a soft mass, one must prepare pastilles from it and dry them in the shade. One of them should be given and kept under the tongue until it melts. Then it should be swallowed.

Oribasius, Galen

The gum tragacanth must be dissolved in the white of fresh, raw eggs; when dissolved, one must pound and add the other ingredients (MS A). When these ingredients have been mixed, one must prepare pastilles and dry them in the shade. One of them should be given and kept under the tongue until it melts. Then it should be swallowed.

Alexander

διάλυε τὴν τραγάκανθαν ὥων προσφάτων τῷ λευκῷ καὶ τρίψας ἐπιβάλλε τὸ σπέρμα τοῦ σικύου καὶ μίξας ἀνάπлатτε καταπότια καὶ ξηραίνων εἰς σκιὰν δίδου ὑπὸ τὴν γλῶτταν κατέχειν καὶ τὸ διαλυόμενον ὑγρὸν καταπινέτω

Aetius

κόψας σήσας τὴν τραγάκανθαν διάλυε ὥων ὥμων προσφάτων τῷ λευκῷ καὶ συλλεάνας ἅμα ἀνάπлатτε καταπότια καὶ ξήραινεν ἐν σκιᾷ καὶ δίδου ἐν ὑπὸ τὴν γλῶτταν κατέχειν καὶ τὸ διαλυόμενον ὑγρὸν καταπίνειν

*Translation:**Alexander*

The gum tragacanth must be dissolved in the white of fresh eggs. Then one must pound and add the seed of cucumber. When this has been mixed one must prepare pastilles from it and dry them in the shade. One of them should be given and kept under the tongue until it melts. Then it should be swallowed.

Aetius

The gum tragacanth must be pounded and sifted; then it must be dissolved in the white of fresh, raw eggs. When this has become a soft mass, pastilles must be prepared from it, which must be dried in the shade. One of these should be given and kept under the tongue until it melts. Then it should be swallowed.

- 268 Oribasius (*o.c.* VI, 39), Aetius (*l.c.*) and Paul (*l.c.*) recommend an extract of different kinds of fruit, such as quinces and pears.
- 269 Flea wort: Schmucker no. 121 *bizr qaṭūnā*: "Plantago psyllium L. (Plantaginaceae), Flohsamen, Wegerich"; Löw, *APf* p. 314; Diosc. Wellmann IV, 69/Berendes IV, 70; Diosc. Triumphans IV, 62.
- 270 Cucumber: Schmucker no. 286 *ḥiyār*: "Cucumis L. (Cucurbitaceae), eine Gurkenart"; al-Bīrūnī p. 140, no. 19; Ibn al-Quff no. 89; Maimonides no. 388; Diosc. Triumphans IV, 173, n. 14.

Ibn Sīnā mentions in his traveller's regimen (p. 184) the first ingredient of this compound drug, namely, mucilage of flea wort, as being effective against thirst.

- 271 Quince: Schmucker no. 383 *safarjal*: "Pyrus cydonia (Rosaceae), Quitte"; al-Bīrūnī p. 183, no. 23; Flora III, pp. 240–4; Diosc. Wellmann I, 115/Berendes I, 160; Diosc. Triumphans I, 87.

Reviewing this chapter it is obvious that, in the description of the causes of thirst and its different remedies, Qusṭā belongs to a long tradition which originates with Galen. Though the differences between the above-mentioned authors are small, the singular terminological similarities between Paul and Qusṭā are remarkable. This leads us to the conclusion that Qusṭā made ample use of this source while composing this chapter.

The other traveller's *regimina* mentioned in note 255 do not recommend the same compound drugs for thirst as Qusṭā, nor the same ingredients, except for Ibn Sīnā, who mentions mucilage of flea wort (see note 270), and Pseudo Thābit (p. 157), who mentions juice of flea wort, cucumber and other ingredients as a remedy for thirst caused by dryness of the stomach.

Chapter 11

- 272 The theme of prophylaxis against vermin has also been treated in the traveller's *regimina* of at-Ṭabarī (p. 111) and ar-Rāzī (p. 220). For a detailed discussion in a separate treatise see ar-Rāzī XIX, pp. 320–333 and Ibn Sīnā IV, p. 235 ff.

Byzantine compilers like Oribasius (*Ecl. Med.* 123) and Paul (V, ch. 1) had already devoted a chapter of their works to this subject.

For the occurrence of insects as a cause of diseases in recent times see Patah (*o.c.*, pp. 84–9). Patah (p. 23) mentions the plague of flies, mosquitoes and bugs in Jiddah.

- 273 Camomile: See note 100.

- 274 Colycynth: Schmucker no. 258 *ḥanzal*: "Cucumis colocynthis (Cucurbitaceae), Koloquinte"; Maimonides no. 158; Ibn al-Quff no. 80 *Koloquinte*: "Der Absud dient zur Wannenvertilgung"; Diosc. Wellmann IV, 176/Berendes IV, 75; Diosc. Triumphans IV, 167.

- 275 Harmel: See note 103.

- 276 Garlic: Schmucker no. 181 *tūm*: "Allium sativum L. (Liliaceae), Knoblauch"; Ibn al-Quff no. 60; Flora II, pp. 125–49; Diosc. Wellmann II, 152/Berendes II, 18; Diosc. Triumphans II, 135.

- 277 Chaste tree: Schmucker no. 547 *fanjankusht*, *banjankusht*: "Vitex agnus castus L. (Verbenaceae), Keuschlamm"; al-Bīrūnī p. 78, no. 33; Flora III, p. 491; Diosc. Wellmann I, 103/Berendes I, 134 *Keuschlamm*: "Die Blätter zur Räucherung angezündet und auch als Lager benutzt verscheuchen die wilden Thiere und helfen als Umschlag gegen den Biss giftiger Thiere"; Diosc. Triumphans I, 72.

Paul (*l.c.*) states that if someone has to spend the night at a place where there are many vermin he should fill up the holes with catthyme or with one of the plants to be mentioned later on. Ar-Rāzī (p. 324, citing Paul) says that one should fill up those places with pounded garlic. Ibn Sīnā (p. 328) says that in order to chase vermin from a certain place one should

sprinkle it with different ingredients and fill up the holes with fumigants and other ingredients.

278 Fumigants: See note 152.

279 Horn of a stag: Is recommended as a fumigant to chase vermin in the traveller's *regimina* of aṭ-Ṭabarī (p. 111) and ar-Rāzī (p. 220); for other parallels see Galen, *De rem. par.* II, 28 (Kühn XIV, p. 490); Picatrix p. 405; Kraus, *Jābir*, p. 66; Kopf, *Abū Ḥayyān at-Tauḥīdī*, p. 185; for the different explanations of the term *ayyil* see E.I.² I, p. 795 s.v. *ayyil* (L. Kopf).

280 Hoof of a goat: Ibn al-Bayṭār IV, p. 139.

281 Magnetstone: Siggel p. 88 *maḡnāṭīs*: "Magnetstein"; Goltz p. 266; Ruska, *Steinbuch* no. 15; Ullmann, *Natur- und Geheimwissenschaft*, pp. 139–40.

282 False bdellium: Schmucker no. 735 *muql*: "(Harz von) Balsamodendron mukul HOOK. und Balsamodendron africanum Bdellium; Commiphora africana bzw. das Harz daraus"; al-Bīrūnī p. 317, no. 99; Ibn al-Quff no. 235; Asaph p. 162; Maimonides no. 230; Diosc. Wellmann I, 67/Berendes I, 80, Diosc. Triumphans I, 29.

283 Cypress: Schmucker no. 379 *sarw*: "Cupressus sempervirens (Cupressaceae), Pyramidale Zypresse"; Flora III, p. 26 ff.; Diosc. Wellmann I, 74/Berendes I, 102; Diosc. Triumphans I, 41.

284 Black cumin: See note 78; Ibn al-Quff no. 144: "Kümmel vertreibt Ungeziefer."

285 Chaste tree: See note 277.

286 Sagapenum: Schmucker no. 390 *sakabīnaj*: "Ferula persica, Sagapenum, Persische Ferula"; al-Bīrūnī p. 255, no. 43; Ibn al-Quff no. 132; Maimonides no. 280; Diosc. Wellmann III, 81/Berendes III, 85; Diosc. Triumphans III, 76.

287 Castor: See note 98.

288 Yellow amber: See note 156.

Oribasius (*l.c.*) and Paul (*l.c.*) mention nearly the same fumigants, as a comparative table will make clear:

<i>Qusṭā</i>	<i>Oribasius</i>	<i>Paul</i>
horn of a stag	horn of a stag	horn of a stag
hoof or hair of a goat	–	hoof or hair of a goat
magnetstone	agate	agate
false bdellium	false bdellium	false bdellium
ceder	chips of cypress/ceder	chips of cypress/ceder
leaves of black cumin	black cumin	black cumin
leaves of chaste tree	leaves of chaste tree	leaves of chaste tree
sagapenum	sagapenum	sagapenum
castor	castor	castor
yellow amber	–	–
–	bitumen	bitumen
–	mint	mint
–	cardamon	–
–	galbanum	galbanum
–	groundsel	groundsel
–	hog's fennel	hog's fennel
–	cat thyme	–
–	–	rosemary

For similar and other fumigants see SBM II, pp. 688–9; ar-Rāzī pp. 320–33; Ibn Sīnā p. 239; Picatrix pp. 282–3.

Ar-Rāzī (p. 324, citing Paul) states that after filling up the holes one should fumigate those places with the horn of a stag, hoof or hair of a goat, olive oil, sagapenum, or tar.

289 Bugs: Freytag I, p. 263 *jirjis*: “*Culices minoris generis*”; Kazimirski I, p. 275: “En Syrie, Punaise”; ad-Damīrī I, p. 273 *jirjis* = *qirqis* (Kazimirski II, p. 723: “Sorte de petits mouchérons”; cf. MS A i.m.: *qirqis*); Wiedemann II, p. 332: “Schnaken.”

290 Yellow vitriol: Schmucker no. 589 *qalqadis*: “Weisses Vitriol”; Ibn-al-Quff no. 200; Goltz p. 154; Siggel p. 86.

291 Wild black cumín: See note 78.

292 Cumín: See note 78.

Paul (*l.c.*) mentions the same fumigant while also adding cow dung, as a comparison will show:

Qusṭā

صفة بخور يذهب بالبعوض والبق
والجرجس : يؤخذ من القلقديس
وبزر الشونيز البري والكمون اجزا
متساوية

Translation:

Qusṭā

Composition of a fumigant which chases away mosquitoes, gnats and bugs: One must take equal parts of yellow vitriol, seed of wild black cumín and cumín . . .

Paul

τοὺς δὲ κώνωπας ἰδίως διώκει θυμια-
θέντα χαλκάνθου καὶ μελανθίου ἀγρί-
ου σπέρμα, κυμίνου ἴσα καὶ βόλβιτον

Paul

Especially gnats are driven away by fumigating with equal parts of yellow vitriol, seed of wild black cumín and cumín and by fumigating with cow dung.

Oribasius (*Ecl. Med.* 124) says that mosquitoes are prevented from entering by smearing absinth with olive oil, or by fumigating with equal parts of cow dung, groundsel, cypress, black cumín, seed of chaste tree, and origan.

Ar-Rāzī (pp. 321–31) mentions the same ingredients as *Qusṭā*, but as separate fumigants or as part of different compounds.

Ibn Sīnā (p. 240) mentions a fumigant consisting of the sawdust of pine, yellow vitriol and black cumín.

293 Paul (*l.c.*) gives the same advice, as a comparison will show:

Qusṭā

وينبغي ان يوقد نار قوية في الموضع الذي
يتخوف فيه من الهوام، فان الهوام تهرب
من ضوء النار

Paul

πρὸς δὲ τούτοις καὶ πῦρ ἀνάπτειν
συχνότερον· φεύγουσι γὰρ ὥς τὸ πολὺ
τὰ θηρία τὴν αὐγὴν.

*Translation:**Qusṭā*

One should light a strong fire where one fears vermin; for vermin flee the light of the fire.

Paul

Besides it is good to keep a fire burning, for vermin mostly flee its light.

- 294 Asphodel: See notes 115, 116.
 295 Chaste tree: See note 277.
 296 Headed thyme: Issa p. 180, no. 23 *ṣa^ctar barrī*; Schmucker no. 454; al-Bīrūnī p. 209, no. 23; Diosc. Wellmann III, 27–30/Berendes III, 38, Diosc. Triumphans III, 29.
 297 Water mint: Diosc. Triumphans III, 35 *al-fūḍanj an-nahrī*: “Flussminze”; Dietrich remarks (n. 2): “Die Minzen, die am oder auf dem Wasser wachsen sind *Mentha aquatica* L. und Var., Wasser- oder Bachminze, Labiatae. Dazu gehört auch die Varietät *Mentha aquatica* L. var. *crispa*, Krauseminze”; Issa p. 117, no. 10; al-Bīrūnī p. 256, no. 45; Flora II, p. 77; Diosc. Wellmann III, 35/Berendes III, 35.
 298 Wormwood: Schmucker no. 444 *shīḥ*: “Der Begriff ‘*shīḥ*’ umfasst eine Reihe von *Artemisia*-Arten, also Beifuss-, Edelraute-Arten (Compositae)”; Ibn al-Quff no. 145; Flora I, pp. 379–90; Diosc. Wellmann III, 23/Berendes III, 24, 25; Diosc. Triumphans III, 26.
 299 Southernwood: Schmucker no. 607 *qaisūm*: “*Artemisia abrotanum* L. (Compositae), Eberraute”; Ibn al-Quff no. 145; Diosc. Wellmann III, 24/Berendes III, 26; Diosc. Triumphans III, 25 *Eberraute*: “Im Altertum galt ihr Kraut als Heilmittel gegen Atemnot, Gelbsucht, als Wurmmittel, zum Fernhalten von Ungeziefer u.a.”
 300 Cat thyme: Schmucker no. 198 *ja^cda*: “*Teucrium polium* L. (Labiatae), Poley-Gamander, Grauer Gamander”; Issa p. 129, no. 15; Maimonides no. 172; Diosc. Wellmann III, 110/Berendes III, 114; Diosc. Triumphans III, 104.
 301 Dittany of Crete: Schmucker no. 728 *mushkṭarāmushīr*: “*Origanum dictamnus* L. (Labiatae), Dost”; Issa p. 129, no. 15; Maimonides no. 242; Diosc. Wellmann III, 32/Berendes III, 34 *Diptam*: “Die Pflanze hat eine solche Kraft, dass ihr Geruch schon giftige, wilde Thiere verscheucht und ihre Berührung sie tödtet”; Diosc. Triumphans III, 31.

Paul (*l.c.*) and Oribasius (*o.c.*, 123), recommending the preparation of a sleeping quarter from the following ingredients, offer a close parallel:

<i>Qusṭā</i>	<i>Paul</i>	<i>Oribasius</i>
asphodel	asphodel	asphodel
chaste tree	chaste tree	chaste tree
headed thyme	–	wild thyme
water mint	mint	mint
wormwood	wormwood	wormwood
southernwood	–	–
cat thyme	cat thyme	cat thyme
dittany of Crete	–	–
–	groundsel	groundsel
–	pennyroyal	–
–	–	viper's bugloss
–	–	organ

Ar-Rāzī (p. 324) advises to put mint and wormwood around one's sleeping quarter; Ibn Sīnā (p. 239) also recommends chaste tree and wormwood.

302 Paul *l.c.* gives a similar advice, as a comparison will show:

Qusṭā

فان لم يتهباً من هذه الحشائش
ما يفرش به المكان كله جعل منها
حول المرقد والمجلس

Paul

εἰ δὲ μὴ δυνατόν πάσῃ τῇ στιβάδι
τοιαύτη χρῆσθαι, περὶ γοῦν τῆς
στρώμνης αὐτὰ τιθέναι

Translation:

Qusṭā

If one does not have enough of these
herbs to cover the whole place, one
should put some of them around the
place where one sleeps and sits

Paul

But if it is impossible to cover the whole
mattress with them, one should anyhow
put them around the blanket

303 A comparison with Paul *l.c.* shows a close parallel:

Qusṭā

فينبغي ان يتوقى النزول تحت الاشجار
والرقود تحتها فان كثيرا من الاشجار
البرية تكون فيها الهوام ، فاذا جعل
الرقود تحتها نزلت بدخان النار وقد
قويت بحرارتها فافسدت وآذت. فاما
الأنية فينبغي ان يستقصى بسد رؤوسها

Paul

τάς τε ἐσχάρας μὴ ποιεῖν ὑπό τινα
δένδρα καὶ ἀλίστα πεύκας ἢ πίτυς.
ἐν ταύταις γὰρ σαλαμάνδραι τε καὶ
κάμπαι θανάσιμοι πλεονάζουσιν, αἵ-
τινες ὑπὸ τῆς τοῦ πυρὸς ἀλέας θερ-
μαινόμεναι πίπτουσιν ἐπὶ τῶν ὄψων ἢ
τῶν ἄλλων ἀγγείων, εἰ τύχοιεν
ἀσκεπῇ.

...

*Translation:**Qusṭā*

One should be careful not to halt to lie down under a tree. For many wild trees contain vermin and when one lies down under them, the vermin, coming down because of the smoke of the fire and strengthened by its heat, cause injuries and harm. As to the vessels, one should take care to close their top . . .

Paul

One should be careful not to make the fire places under certain trees, especially under pine-trees or firs. For large amounts of salamanders and deadly caterpillars stay in them. And they, warmed by the heat of the fire, fall into the food or even into the vessels, if they happen to be uncovered.

304 Galbanum: Vullers I, p. 297 *bīrzad*: “unde ar. *bārzad*, galbanum”; Steinschneider no. 234; Maimonides no. 339; Diosc. Wellmann III, 87/Berendes III, 87 *Galbanum*: “Wilde Thiere verscheucht es, wenn es zur Räucherung angezündet wird, die damit eingesalbten schützt es vor den Bissen derselben.”

305 Black caraway: Schmucker no. 649 *kammūn karmānī*: Schmucker states that some authors identify this species with *kammūn aswad* (black-caraway); WKAS I, p. 365 does not give an identification; al-Bīrūnī p. 282, no. 35; Ibn al-Quff no. 223.

Paul *l.c.* advises a salve consisting of wax, rose-oil, galbanum, grounded horn of a stag and ethiopian cumin; this salve, however, should not be smeared on the vessels, but on the person himself.

306 Mallow: Diosc. Triumphans II, 101 *al-ḥubbāzā*: “Malve”; Schmucker no. 738; Ibn al-Quff no. 86; Diosc. Wellmann II, 118/Berendes II, 144 *Malve*: “Aufgestrichen wirkt sie auch gegen die Stiche der Bienen und Wespen; wenn aber jemand sich mit ihr roh und mit Oel fein gerieben bestreicht, bleibt er von den Stichen verschont.”

Paul mentions the same recipe, as may be inferred from a comparison:

Qusṭā

فاما الزناير والنحل فانه يتحرّز منها
بالتمسح بدهن الخبازي وبماء
وباستعمال الادهان في المواضع
التي يخاف مضرتها فيها

Paul

ἰδίως δὲ ὑπὸ μελιττῶν καὶ σφηκῶν
πληγῆναι κωλύει συγγριόμενα
μαλάχης φύλλα μετ' ἐλαίου τριβόμενα

*Translation:**Qusṭā*

As for hornets and bees, one should use as a prophylaxis against them the anointment with oil of mallow or its extract, or the application of the different kinds of oils to those places where one fears their injuries.

Paul

Especially stings of bees and wasps are prevented by an embrocation of leaves of mallow pounded with oil.

Ibn Sīnā (p. 240) mentions extract of mallow as an ingredient which chases away hornets.

The similarities between Qusṭā and Paul's recipes, advices, vocabulary and structure of the whole chapter, show clearly that Qusṭā borrowed heavily from Paul. This assumption is indirectly corroborated by ar-Rāzī's citation of Paul (note 288). It shows that Paul's treatise on poison was well-known and used in ar-Rāzī's time, one generation following Qusṭā.

Chapter 12

307 Stings or bites: Usually treated by medical authors in their discussion of poisons and their antidotes. The Arab doctors created a rich literature in this field, basing themselves on Greek and Indian sources; see Ullmann, *Medizin*, ch. 16, for an extensive survey.

For a treatment by Byzantine compilers see Oribasius, *Ecl. Med.* 117 ff.; Paul Bk. 5, ch. 2 ff.

The subject of stings or bites is not treated in the traveller's *regimina* of aṭ-Ṭabarī, ar-Rāzī, Pseudo Thābit and Ibn Sīnā; all of them, however, discuss this theme in their treatises on poisons; cf. aṭ-Ṭabarī pp. 444–9; ar-Rāzī XIX, pp. 241–448; Pseudo Thābit ch. 25; Ibn Sīnā IV, pp. 217–62. Ibn al-Jazzār treats the subject extensively in his traveller's regimen (Bk. VII, chs. 10–12).

308 A comparison with Paul (V, ch. 2) will show a close similarity:

Qusṭā

فان عرض لاحد ان تناله آفة من بعض
الهوام ايها كان ، فأول ما ينبغي ان يبدأ
به من العلاج ان يمسّ الموضع مصّا
شديدا وان يكون الذي يمسّه ليس بصائم
بل يكون قد تناول طعاما وان يتمضمض
قبل المصّ بنبيذ مطبوخ وان يمسك في فيه
زيتا في وقت مصّه . فاذا مصّه فينبغي
ان يأخذ قدح زجاج ويشعل فيه فتيلة
بالنار ، فاذا استوقدت يلقئها داخل
القدح ويكبّ القدح على الموضع
ويكبسه ، فان القدح عند ذلك يقوم
مقام المحجمة ويجذب السمّ من داخل
الاعضاء الى خارجها . ثم يشرط الموضع
المنتفخ ويمصّ حتى يخرج منه دما صالحا ،
فان بخروج ذلك الدم يخرج السمّ ان شاء
الله .

Paul

Ἐὰν δὲ συμβῇ πληγῆναί τινα ἢ δηχ-
θῆναι ὑπό τινος ἰσβόλου παρ' αὐτὰ
μὲν ἐκμυζήσασθαι κεχρησθαι· δεῖ δὲ τὸν
ἐκμυζήσοντα μήτε νῆστιν εἶναι ἀλλὰ
καὶ οἶνω προκλῦσαι τὸ στόμα καὶ
ἐλαιον κατέχειν ἐν αὐτῷ· ἔπειτα τοῦ
μορίου προσδεχομένου σικυάζειν τὰ
δεδηγμένα σὺν πολλῇ φλογὶ κατα-
σχάζοντα καὶ τοὺς πλησίον τόπους·
ἀντισπᾶται γὰρ ἅμα τῇ τοῦ πνεύμα-
τος καὶ αἵματος ὀλκῇ ὁ ἰός.

*Translation:**Qusṭā*

If someone is stung or bitten by vermin, the first treatment one should give him is to suck out the place thoroughly. The person who does the sucking should not have an empty stomach, but should have taken some food. Before he begins to suck he should rinse his mouth with boiled wine. He should hold oil in his mouth during the time of sucking. After this he should take a glass, light a wick and put the burning wick inside. Thereupon the glass should be placed upside down on the wound and held there for a while. For this glass replaces a cupping glass and attracts the poison from inside the limbs to their outside. He should then make an incision in the swollen place and suck until he extracts healthy blood. For together with that blood the poison comes out as well, God willing.

Paul

If someone is stung or bitten by some poisonous animal, then sucking must be applied immediately. The person who is to suck may not have an empty stomach, but should rinse his mouth with wine and keep some oil in it. Then, if the place is suited to it, he should apply cupping glasses with a large flame, after having made incisions in the surrounding places as well. For together with the extraction of the pneuma and the blood, the poison will come out as well.

Both Qusṭā and Paul mention the following major elements of treatment:

1. to suck; 2. not to have an empty stomach; 3. to rinse one's mouth; 4. to keep some oil in one's mouth; 5. to apply cupping glasses; 6. to make an incision.

Qusṭā differs from Paul insofar as he recommends making an incision after applying the cupping glasses and then sucking once more.

Ar-Rāzī (p. 337) brings the following version of this advice while citing Paul:

Text:

قال بولس : اذا عرضت لدغة لا يدري
ما هي فلتمص من ساعتها بعد ان
يتمضمض الماص ، ثم توضع عليه
المحاجم ان احتمل الشرط او بالنار
على ما حوله

Translation:

Paul said: When a bite occurs of an unknown kind, it should be sucked immediately, after the person who does the sucking has rinsed his mouth. Then cupping glasses [with a flame inside] should be applied. If possible, an incision [or with a flame] should be made around the place.

The text of this version seems to be corrupt. I corrected it in my translation to the best of my knowledge.

When one compares ar-Rāzī's citation of Paul with the text of Paul himself it is obvious that ar-Rāzī omits essential elements, such as:

1. not to have an empty stomach, and 2. to keep some oil in one's mouth

Qusṭā's version, containing all the essential elements of the text of Paul, is thus much more similar to it than ar-Rāzī's explicit citation.

Ibn Sīnā (p. 236) states: "Likewise cupping glasses; sometimes one must make a deep incision when the poison has deeply penetrated the body. Sometimes, however, it is enough to apply leeches; in that case one also does not need to suck the wound out, which is useful as long as the poison is still in the skin. So sometimes sucking is enough; the person who does the sucking, however, should not have an empty stomach, but should have eaten . . . and rinsed his mouth with fragrant wine. He should also drink a little bit of it and keep oil of roses or oil of violets in his mouth."

This citation shows clearly that the starting point of Ibn Sīnā's discussion, namely, the measure of penetration of the poison into the body, is different from that of the authors mentioned before. He also refers to another possible way of treatment, namely, leeches.

Maimonides (*Sammei ha-Mawet*, p. 97) gives the following advice: "When someone is bitten . . . someone else should make incisions in the spot of the bite, suck as hard as possible and spit it out. But first he must rinse his mouth with olive oil or with wine and oil . . . Some doctors stipulated that the person who does the sucking must have an empty stomach, but others said that he must eat a little bit and then suck. If there is no one there to suck he should apply cupping glasses."

Maimonides mentions the same major elements as Paul and Qusṭā, except for the advice to keep some oil in one's mouth. His version is also different insofar as it only recommends cupping glasses as an alternative for sucking and insofar as it mentions the opinion of some doctors who say that the person doing the sucking must have an empty stomach.

Aṭ-Ṭabarī (p. 446) recommends that someone stung by a scorpion should have the poison sucked out of his body by means of cupping glasses. Pseudo Thābit (p. 302) gives the same advice for someone stung by a hornet.

- 309 Sulfur: WKAS I, p. 28 *kibrūn*: "sulphur"; Schmucker no. 618; Goltz pp. 242, 278.
- 310 Fig leaves: Diosc. Wellmann I, 128/Berendes I, 183 *Feigen*: "Der Saft des wilden und zahmen Feigenbaumes heilt auf die Wunde getröpfelt Skorpionstiche und Bisse von giftigen Thieren und Hunden"; cf. note 178.
- 311 Onion: See note 127.
- 312 Leek: Diosc. Wellmann II, 149/Berendes II, 178 *Lauch*: "Der Saft mit Honig getrunken hilft gegen den Biss giftiger Thiere; dasselbe leistet er auch als Kataplasma; cf. note 126.
- 313 Salt: Schmucker no. 737 *milḥ*: "Salz"; al-Bīrūnī p. 308, no. 56; Maimonides no. 221; Goltz pp. 271–4; Diosc. Wellmann V, 109/Berendes V, 125 mentions its usefulness for bites of several kinds of vermin.
- 314 Garum: Schmucker no. 721 *murri*: "Das γάρου des Dioscurides, ist Garum: Sauce oder Brühe aus marinierten Fischen"; al-Bīrūnī p. 303, no. 26; Diosc. Wellmann II, 32/Berendes II, 34; Diosc. Triumphans II, 30.
- 315 Vinegar: See note 118; Diosc. Wellmann V, 13/Berendes V, 21 *Essig*: "Gegen die Bisse giftiger Thiere, welche kälten, bewährt er sich in warmer Bähung, gegen die, welche ein brennendes Gift auswerfen, in kalter Bähung."
- 316 Bitumen: Schmucker no. 350 *zift*: "pix, Pech"; al-Bīrūnī p. 168, no. 18; Ibn

al-Quff no. 111; Maimonides no. 138; Diosc. Wellmann I, 72/Berendes I, 94.

A close parallel to this treatment of the place of the sting or bite is the following passage from Paul (*l.c.*):

Terminology:

Qustā

وينبغي بعد ذلك ان يضمم الموضع
بالادوية الحارة التي لها جذب قوي

Paul

καταπλάσσειν τε μετὰ ταῦτα τοῖς
θερμαίνειν καὶ ἀμύσσειν το δῆγμα
δυναμένους

Translation:

Qustā

After that he must dress the place (of the sting or bite) with hot drugs which have a strong power of attraction.

Paul

After that it is necessary to dress the place of the sting or bite with heating and aseptic dressings.

Ingredients:

Qustā

ashes of sulfur
ashes of fig leaves
bread crumbs
pounded onion
leek
tail of a sheep
pounded salt
garum
vinegar
bitumen
—
—

Paul

ashes of coal
ashes of figs
meal of barley or bread
onion
leek
droppings of a goat
salt
garum
vinegar
bitumen
lye
cedar

Ar-Rāzī (p. 313) advises one to smear the place of the sting or bite with ashes and vinegar and to dress it with ashes of wood, of fig tree or of vine.

317 Vinegar: See note 118.

318 Mountain mint: Diosc. Triumphans III, 35 *al-fūdānj al-jabalī*: “Bergminze”; Dietrich remarks (*l.c.*, n. 3): “Die Bergminze dürfte eine Art aus der Gattung *Nepeta* sein, vielleicht *Nepeta Cataria* L. und Var., Katzenminze, Labiatae. Die Bergminze war bis ins Frühmittelalter als Minthe *nepeta* bekannt, wurde aber mit *Satureja calamintha* L. und Var. und anderen Arten verwechselt”; see note 297 as well.

319 Origan: See note 129.

320 Seawater: Diosc. Wellmann V, 11/Berendes V, 19 *Meerwasser*: “Weiter hilft es gegen die Bisse giftiger Thiere, welche Zittern und Kälte bringen,

besonders des Skorpions, der Spinne und Natter''; Ibn al-Bayṭār IV, p. 128.

A comparison with Paul *l.c.* shows that he refers to the same remedy with minor variations:

Qusṭā

وينبغي ان يطلي الموضع ايضا بخل
قد طبح فيه فودنج جبلي وصعتر
او بماء البحر او بماء مالح

Paul

ἀρμόζει δὲ αὐτοῖς καὶ κατάντησις
δι' ὄξους θερμοῦν, ἐν ᾧ καλαμίνθη
ἐνήψηται, ἢ δι' ὄξους καὶ θαλάττης ἢ
δι' ὀξάλμης

Translation:

Qusṭā

He should also plaster the place with
vinegar, in which mountain mint
and origan have been cooked, or
with seawater or with salt water.

Paul

Also useful for them is a suffusion of
warm vinegar, in which mint has
been cooked, or of vinegar with sea-
water, or of salt with vinegar.

321 Paul *l.c.* mentions a similar remedy; see next comparison:

Qusṭā

وينبغي ان يضمّد الموضع بفراخ الحمام
وفراريج ذبحت من ساعتها حارة ويشدّ
على العضو فانها تجذب السمّ وتسكن
الوجع

Paul

ἐπιβλητέον δὲ τοῖς τόποις ὀρνιθας,
καὶ μᾶλλον τοὺς ἀλεκτρυόνας, ἢ
ἕτερα ζῶα ἀνοτέμνοντα θερμά· τὸν τε
γὰρ ἰὸν μεταλαμβάνει καὶ παρηγορεῖ
τὰ ἀλγήματα

Translation:

Qusṭā

It is necessary as well to dress the
place (of the sting or bite) with
young pigeons or chicken, which
must be slaughtered at that moment
and put on the limb while (still)
warm.

Paul

One should also put on the place (of
the wound) hens, preferably young
cocks, or other animals, cut open
and warm. For they absorb the poi-
son and relieve the pain.

Cf. Galen, *De rem. par.* II, 28 (Kühn XIV, p. 489): "The blood of a duck is effective against all kinds of venomous and death-bringing animals. The meat of a hen recently slaughtered has the same effect when put on the bite." Ar-Rāzī (p. 320) refers to a dressing of a chicken or any other bird which must be cut open and replaced every once in a while. Ibn Sīnā (p. 218) mentions a dressing of a hen or cock which must be cut open alive and replaced every hour.

- 322 Cardamon: Schmucker no. 561 *qāqulla*: “1. Same von Elettaria cardamomum (Zingiberaceae), Kardamom-Pflanze (Kleines Kardamom). 2. Same von Elettaria major SM (Zingib.), Grosses Kardamom. 3. Same von Amomum melegueta ROX., “Paradieskörner”; al-Bīrūnī p. 263, no. 1; Flora III, pp. 499–500; Diosc. Wellmann I, 6/Berendes I, 5 *Cardamomon*: “Mit Wein genommen ist es ein gutes Mittel gegen Skorpionstiche und alle Bissen giftiger Thiere”; Diosc. Triumphans III, 70, n. 6.

Paul has a counterpart to this recipe of compound dressings:

Qusṭā

وينبغي ان يضم الموضع ايضا بالاضمة
المركبة المعمولة بقاقلة الطيب وبالاشيا
العطرية القوية الرائحة.

Paul

καὶ ἐμπλάστοις δὲ χρηστέον φαρμά-
κοις τῇ τε δι' ἁλῶν καὶ τῇ διὰ
κάχρυος καὶ ἀδάρκης καὶ τὸ ὅλον
τῆς δριμυτέρας δυνάμεως.

Translation:

Qusṭā

Compound dressings, which are prepared from fragrant cardamon and from other spices with a strong aroma, should be applied as well.

Paul

One should also use medicinal dressings, for instance, those consisting of salt, of barley, and of adarke; in short, those with a very strong healing power.

Oribasius (*Ecl. Med.* 119) mentions a compound dressing with salt and other ingredients.

- 323 Cf. Ibn Sīnā (p. 236): “Some of the remedies useful for poisons are poisons themselves, though not as strong.”

These recommendations of Qusṭā and Ibn Sīnā confirm Klein-Franke's supposition (*Vorlesungen*, p. 94): “Nicht auszuschliessen ist, dass einige Ärzte im Islam eine Ausnahme von dieser Regel (die allopathische Behandlungsmethode, *contraria contrariis*) machten und eine der Homöopathie ähnliche Methode anwandten.”

- 324 Nabataean carob: Schmucker no. 807 *yanbūt*: “Diese Pflanze ist bis heute nich sicher bestimmt. Tuḥ 204 deutet an, dass es sich entweder um eine Aca-cia (Mimoseceae) oder die wildwachsende Art des Johannisbrothbaumes handle”; Steinschneider no. 2041: “Caroubier nabathéen”; al-Bīrūnī p. 303, no. 26; Flora II, p. 418 ff.; Diosc. Wellmann III, 150/Berendes III, 157; MS A has an interlinear note *ḥunūb nabaṭī* (Nabataean carob).

- 325 Bitumen: See note 228.

- 326 Sumac: Diosc. Triumphans I, 78 *rūs*: “Sumach”; Diosc. Wellmann I, 108/Berendes I, 147.

- 327 Sorb: Schmucker no. 516 *ḡubairā*: “Sorbus domestica L. (Rosaceae), Speierling”; al-Bīrūnī p. 244, no. 3; Diosc. Wellmann I, 120/Berendes I, 173; Diosc. Triumphans I, 96. See the identity of sumac and sorb as stated by Qusṭā (l. 411); see Dietrich's note (Diosc. Triumphans I, 96).

- 328 Ūqīya: 12 dirham = 37,5 grams (Hinz *o.c.*, p. 35).

Paul (*l.c.*) refers to both sumac and other ingredients to be drunk by someone ever bitten by a poisonous animal.

329 See turtle: Siggeḷ, *Jābir* p. 205; Paul *l.c.* refers to the same remedy; ar-Rāzī (p. 320) and Ibn Sīnā (p. 237) mention the blood of a turtle.

330 Castor: See note 98; Diosc. Wellmann II, 24/Berendes II, 26: *Hoden des Bibers*: “Mit Essig wird er getrunken gegen tödtliche Gifte.”

331 Cucumber: See note 263.

332 Leek: See note 312.

333 Lizard orchis: Schmucker no. 274 *ḥuṣṣā at-ṭaʿlab*: “*Tulipa gesneriana* L. als Sammelart (Liliaceae), Garten-Tulpe”; al-Bīrūnī p. 146, no. 44; Maimonides no. 391; Flora I, p. 599 ff.; Issa p. 129, no. 8; Diosc. Wellmann III, 128/Berendes III, 131; Diosc. Triumphans III, 120.

334 Chaste tree: See note 277.

335 Birth wort: Schmucker no. 341 *zarāwand*: “*Aristolochia* L., Osterluzei (Aristolochiaceae)”; Ibn al-Quff no. 115; Maimonides no. 133; Issa p. 21, no. 4; Diosc. Wellmann III, 4/Berendes III, 4; Diosc. Triumphans III, 4.

336 Laurel: See note 95.

337 River crabs: Schmucker no. 375 *saraṭān nahrī*: “ist der Flusskrebs *Astacus fluviatilis* Fabr. u. Var.”; al-Bīrūnī p. 181, no. 16; Ibn al-Quff no. 133; Diosc. Wellmann II, 10/Berendes II, 12; Diosc. Triumphans II, 9.

Paul *l.c.* mentions partly the same drugs as Qusṭā, as a comparison will show:

Qusṭā

castor
root of cucumber
extract of leek
lizard orchis
chaste tree
birth wort
seed of laurel
river crabs roasted or cooked

Paul

castor
root of cucumber
extract of leek
—
seed of chaste tree
birth wort
laurel
river crab roasted or cooked

Paul also refers to other drugs lacking in Qusṭā's enumeration. Ibn Sīnā p. 237 mentions river crabs, castor, chaste tree and birth wort as drugs to be used against stings or bites.

338 Theriaca magna: Ullmann, *Medizin* p. 321: “Aus griechischen und indischen Quellen lernten die Araber zahlreiche Giftarten, ihre Wirkungsweisen und die Mittel zu ihrer Bekämpfung kennen. ἡ θηριακή wird arabisch zum *tiryāq*.”

Galen (*De theriaca ad Pisonem*; *De theriaca ad Pamphilianum*; Kühn XIV, pp. 1–310) describes the different theriacs in detail.

Paul (*l.c.*) recommends the use of the “viper-theriac.” Aṭ-Ṭabarī (p. 448) mentions the theriaca maior (*al-tiryāq al-akbar*). Ar-Rāzī (p. 312) mentions the theriaca magna as useful against vermin. Ibn Sīnā (p. 327) refers to a universal theriac for stings or bites.

Antidotarium Nicolai (p. 145) states (*s.v.* Tyriaca magna Galeni): “Precipue contra omnia venena et serpentum morsus et reptilium valet.”

Maimonides (*Sammei ha-Mawet*, p. 93) says that the preparation of the theriaca magna (*ha-tiryaq ha-gadol*) in Egypt is very difficult, because of the fact that most of its ingredients are lacking in that country.

- 339 The additional reading of MS A (l. 418) and MSS B, C, D (l. 426) is similar to that of Paul *l.c.*, as a comparison will show:

Qustā

وقد ينفع من لسع الهوامّ فصد العرق ولا
سياما اذا كان الملسوع شابًا ممتلئ البدن

Paul

εἰ δὲ φθάσει ὁ ἰδὸς ἀναδοθῆναι κατὰ τὸ
σῶμα, φλεβοτομία χρηστέον αὐτίκα,
καὶ μάλιστα πληθωρικοῦ τοῦ δηχθέν-
τος σοι φαινομένου,

Translation:

Qustā

Bleeding is equally useful against the
sting or bite of vermin, especially
when the bitten person has a full
body.

Paul

If, however, the poison has already
spread through the body, one should
immediately apply bleeding; espe-
cially when the bitten person ap-
pears to be full (-bodied),

This additional reading seems to belong to Qustā's original text, since the other remedies mentioned by Qustā are also similar to those mentioned by Paul in his parallel chapter.

- 340 Sagapenum: See note 286; Diosc. Wellmann III, 81/Berendes III, 85 *Lab*: "Mit Wein getrunken hilft es den von giftigen Thieren gebissenen."
- 341 German iris: Schmucker no. 410 *sausan asmānjūnī*: "(Wurzel von) Iris florentina L. (Iridaceae) (möglicherweise auch: I. pallida LAM., Bleiche Schwertlilie; I. germanica L., Deutsche Schwertlilie)"; Issa p. 100, no. 14; Ibn al-Quff no. 130; Diosc. Triumphans I, 1; Maimonides no. 272; Diosc. Wellmann I, 1/Berendes I, 1; MS A has a marginal note: *asmān jūn* (is Persian for "sky-blue"; cf. Freytag I, p. 36).
- 342 Ginger: Schmucker no. 355 *zanjabīl*: "Amomum zingiber, Ingwer, von Zingiber officinale (Zingiberaceae)"; al-Bīrūnī p. 169, no. 22; Ibn al-Quff no. 107; Flora III, pp. 501–5; Diosc. Wellmann II, 160/Berendes II, 189; Diosc. Triumphans II, 144.
- 343 Birth wort: See note 335.
- 344 Rue: See note 93.
- 345 Agaric: Schmucker no. 512 *ḡārīqūn*: "auf Lärchenarten (bes. Larix europaea LAM. & DC. = L. decidua MILL., Europäische Lärche; Larix sibirica LED., Sibirische Lärche; Pinaceae) schmarotzender Schwamm"; Ibn al-Quff no. 188; Diosc. Wellmann III, 1/Berendes III, 1 *Lärchenschwamm*: "Ferner ist es in der Gabe von 1 Drachme mit Mischtrank genommen ein Gegenmittel gegen tödliche Gifte"; Diosc. Triumphans III, 1.
- 346 Bitter vetch: WKAS I, pp. 558–9 (128 b 39) *karsinnatun*; *karsannatun*: "bitter vetch (Vicia ervilia Willd.)"; Schmucker no. 626; al-Bīrūnī p. 276, no. 3; Maimonides no. 185; Diosc. Wellmann II, 109/Berendes II, 131; Diosc. Triumphans II, 92.

347 Pastilles: See note 141.

348 Dāniq: See note 142.

A comparison of this compound drug mentioned by Qusṭā with Paul (*l.c.*) shows a close parallel:

Terminology:

Qusṭā

ويستعمل هذا الدواء فانه كثير المنفعة
في لسع الحيات والعقارب وجميع الهوام

Paul

κέχρησο δὲ καὶ συνθέτω θηριακῇ
τοιᾷδε· [θηριακῇ πρὸς τὰ ἰοβόλα καὶ
τὰ δηλητήρια, ἐχεοδήκτους, σκορ-
πιοπλήκτους]

Translation:

Qusṭā

One can also apply the (following)
drug, for it is useful against bites of
snakes, stings of scorpions and of all
vermin.

Paul

Apply as well the following com-
pound theriac: [Theriac against all
venomous and deadly animals, bites
of vipers and stings of scorpions]

Drugs:

Qusṭā

sagapenum	4 d.
German iris	4 d.
ginger	4 d.
birth wort	5 d.
rue	3 d.
agaric	3 d.
bitter vetch	1.d

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Paul

sagapenum	4 dr.
Illyric iris	4 dr.
ginger	4 dr.
birth wort	5 dr.
rue	3 dr.

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snake bryony	4 dr.
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fragrant Cachrys	4 dr.
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frankincense	3 dr.
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meal of peas	2 dr.
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According to Paul and Qusṭā, pastilles should be prepared from these drugs; Paul states that each must weigh 3 obols = 1,875 gram; Qusṭā mentions as their weight 4 dāniqs = 2,678 grams.

When one compares this chapter, its recipes, terminology and structure with that of Paul, one cannot but conclude – in view of the many striking similarities – that Qusṭā made a systematic use of this source. This deliberate choice from the material offered by Paul stands in sharp contrast to the random selection made by ar-Rāzī from Paul's treatise on poisons (cf.

ar-Rāzī XIX, pp. 241, 256, 283, 335, 337, 365, 390). Qusṭā's text thus offers a first concrete example of the important part played by Paulus' treatise on poisons in the transmission of Greek knowledge on poisons; cf. Ullmann, *Medizin*, p. 323: "Für die Vermittlung griechischer Giftkenntnisse dürften auch die einschlägigen Abschnitte bei Aetios von Amida im Buch XIII und bei Paulos im Buch V von Wichtigkeit gewesen sein." Though he discusses ar-Rāzī's treatise on poisons (pp. 331–2), Ullmann does not refer to his citations from Paul. Aetius, discussing the different poisons, proceeds according to the following scheme:

1. description of the poisonous substance; 2. description of the symptoms; 3. recommendations for therapy.

Paul, however, does not follow this triple scheme, nor does Qusṭā in his footsteps. From this follows the conclusion that Qusṭā was not influenced by Aetius; cf. Ullmann, *o.c.*, p. 334).

Chapter 13

349 *Dracunculus medinensis*: For the description of this disease, see Ullmann, *Medicine*, p. 81: "Enlightening is the case of the guinea-worm, also called the Medina-worm (*Dracunculus medinensis*), a parasite which attacks human beings. The female worm is generally a meter long and lives subcutaneously in the tissue. On maturity, the head of the worm breaks through the skin (preferably of the lower extremities) and discharges large numbers of larvae (microfilaria) into stagnant water. There the larvae are eaten by Cyclops-crabs, and by way of drinking water contaminated by these crabs reach the stomach where they lodge themselves. The worm needs about a year to reach full maturity. It can be extracted at the point of breakthrough."

For the description of this disease in ancient sources see Ullmann *l.c.*: "In ancient times this cycle was naturally not yet known. Galen had only heard from many people that in a place in Arabia there were "little snakes" (*drakontia*) that had a "nerve-like" nature similar to intestinal worms in colour and thickness. He says that he himself has never seen them and can therefore say nothing about their origin or their nature. But before Galen, Leonidas and Soranus had written about the *drakontia* as Paul of Aegina reports. Soranus had disputed the animal nature of this disease, rather took it to be a nerve . . . And also in the pseudo-Galenic *Definitiones medicae* (no. 437) the *drakontion* is designated a "nerve." Paulus himself gives no clear definition."

For another ancient author, not mentioned by Ullmann, but giving an accurate eyewitness account of this worm see Rufus of Ephesus, *Quaest. med.* 67 ff. (ed. Gärtner p. 44, 25 ff.): "In Arabien z.B. tritt eine Krankheit "Ophis" auf, was griechisch νεῦρον (Sehne, Nerv) bedeutet. (Das Tier) ist so dick wie eine Darmsaite und bewegt und dreht sich im Fleisch wie die Schlangen, hauptsächlich in der Gegend der Schenkel und Waden, allerdings auch anderswo im Körper. Ich sah nun in Ägypten einen Araber, der diese Krankheit hatte, und jedesmal, wenn (der Wurm) nach aussen hervorbrechen wollte, verspürte er Schmerzen und bekam Fieber. Und (die Stelle) schwoll auf wie die eitrigen Geschwüre, bis sie schliesslich aufbrach und feucht und faulig wurde. Der Mann hatte nun diese Erscheinung an der Wade, seine Dienerin aber in der Gegend des Nabels, eine andere

(Frau) in der Lendengegend. Als ich aber fragte, ob diese Krankheit bei Arabern gewöhnlich sei, sagten die Leute, sowohl die Araber litten an dieser Krankheit, aber auch viele Fremde, die dorthin kämen, würden von ihr befallen, wenn sie von dem Wasser tranken. Denn dies sei vor allem daran Schuld." See also Gärtner's commentary to this passage on pp. 100–1.

Possibly influenced by these ancient sources Arab authors called this disease *al-ʿirq al-madanī* (the Medinan vein). By this term it became impossible for them to find out the real origin of this disease, namely, a parasitosis, an infestation (see Ullmann *o.c.*, p. 82).

It is no wonder then that the Arab doctors did not develop any new theory about the true nature of this disease. Ullmann (p. 83) says that only in the 17th century did the German doctor and orientalist Engelbert Kaempfer (1651–1716) give a very exact description of the worm, the way to draw it out and its origin as the result of drinking foul water.

For the occurrence of this disease in pre-Islamic Arabia and in the Umayyad period see Ullmann, *Medicine*, p. 1: "Among the parasites, bilharziasis, intestinal roundworms, pineworms and Guinea worms (*al-ʿirq al-madanī*) were the most common."

For recent times see Burckhardt, *Reisen in Arabien*, p. 363: "Die Elephantiasis und die Vena Medinensis sind nicht ungewöhnlich (im hedjaz)." Patah *o.c.*, pp. 23–4 states: "In the water of Djeddah they found cyclops, host of *Dracunculus medinensis*, a disease of poor people drinking bad water" (cf. note 224).

Qusṭā inserted his description of this disease and its treatment because of its frequent occurrence in the region of al-Madīna, as he states himself (ll. 427–9). Of the traveller's *regimina* mentioned in note 4, only that of Ibn al-Jazzār discusses the disease of worms (Bk. IV, ch. 18). Ar-Rāzī (XI, pp. 290–6) and Ibn Sīnā (IV, pp. 138–40) discuss it in a special section of their work.

- 350 For the origin of the theory of spontaneous generation or *generatio aequivoca* as voiced by Qusṭā in these lines see Rodemer, *Die Lehre von der Urzeugung*, p. 5: "Dem ganzen Altertum galt es als selbst verständlich, dass eine Entstehung von Organismen aus organischen und sogar unorganischen Stoffen ohne einen Fortpflanzungsakt möglich sei, wenn die erforderlichen stofflichen Voraussetzungen und die den Vorgang fördernden günstige Begleitumstände gegeben wären. Die Vorstellung die zum ersten Male von Aristoteles wissenschaftlich begründet, aber schon lange vor ihm verbreitet, führte zu der Prägung des Begriffes *generatio aequivoca*: Man hat den Begriff *generatio* "homonym" für einen Vorgang eingesetzt der eigentlich gar keine *generatio* oder Erzeugung, sondern ein blosser spontanes Entstehen ist."

This theory remained in force until the 19th century when it was finally refuted by Louis Pasteur; cf. Lindeboom, *Inleiding*, p. 245; Farley, *The spontaneous generation controversy*, p. 7, states, however: "That spontaneous generation is no longer an issue to most biologists, stems, in the final analysis, from the work of (the Russian Marxist biochemist) Alexander Oparin, not Pasteur"; and p. 171: "In 1936, Oparin produced perhaps the most significant book ever published on the problem. Entitled *The Origin of Life*, it was the first work to approach the issue from the standpoint of dialectic material-

ism. In a very real sense, the acceptance of Oparin's basic position has led to the final abandonment of the spontaneous generation controversy."

For the occurrence of this theory in Islam see Ullmann, *Natur- und Geheimwissenschaften*, pp. 54–56, and Kruk, *A Frothy Bubble*. Ullmann *o.c.*, p. 54, states: "Die Möglichkeit der Urzeugung (*generatio spontanea*) wird im Islam allgemein anerkannt. Diese Lehre wurde durch die Autorität des Aristoteles gestützt, und daher wird sie von den Philosophen immer wieder vertreten." Ullmann refers, for example, to Ibn Ṭufayl, Ibn an-Nafis and Ibn Bājja.

But this theory also occupied an important place in zoological literature, as in the works of al-Jāhīz, at-Tauḥīdī and ad-Damīrī (Ullmann *o.c.*, pp. 54–5). For its occurrence in magical literature see Kraus, *Jābir*, pp. 105–8.

According to the tradition (an-Nadīm, *Fihrist* I. p. 252; transl. Dodge II, p. 605), Aristotle's zoological works, being the first scientific foundation of this theory, were translated into Arabic by Yaḥyā Ibn al-Biṭrīq, and have since then been known as *The Book of Animals* (*Kitāb al-Ḥayawān*). Endress (*Die arabischen Uebersetzungen*, pp. 113–5) has shown that this translation cannot be from the hand of this translator; he suggested that it might be the work of Uṣṭāṭ. Drossaart-Lulofs (*Aristotle, Generation of Animals*, p. 4) holds that both attributions are mistaken; he prefers to call the translator "Anonymous." According to Kruk (*The Arabic version of Aristotle's Parts of Animals*, p. 19), the translator must have lived in the first half of the 9th century, in view of the rather primitive style of the translation.

According to Ibn an-Nadīm (*o.c.*, *l.c.*) there existed besides this translation ancient compendia of *The Book of Animals*. One of these, supposedly written by Themistius and translated into Arabic by Ishāq Ibn Ḥunayn, was edited by Badawī. Zimmermann and Brown, however, reviewing this edition (*Der Islam* 50 (1973), pp. 323–4) showed that Ishāq is most likely not the translator. Kruk (*o.c.*, p. 42) came to the conclusion that the origin of this compendium remains obscure.

In the light of this complicated and undecided state of affairs concerning both translation and compendium, only a terminological comparison can decide whether Qusṭā made use of any of these works. For this purpose Qusṭā's text has been compared with the Arabic translation of Aristotle's *De Generatione Animalium* (ed. Brugman-Drossaart-Lulofs) and with the Arabic translation of the compendium of Themistius (ed. Badawī):

<i>Qusṭā</i>	<i>De Generatione A.</i>	<i>Compendium</i>
والعلة التي تشتمل على هذه الاشياء جميعا في تولدها العفونة المعتدلة (11. 431-2)	مثل الحيوان الذي لا يكون من جماع ولا من سفاد بل من الهيولى التي تعفن ومن الفضول (715a25)	وجميع الحيوان الذي يتولد من العفونات ... (p.222) وبعض الحيوان من ارض عفنة (p.223)
لكنها (الحرارة والرطوبة) مختلفة واختلافها على قدر اختلاف الحيوان المتولد منها (1. 436)	فبين هذه الاصناف اختلاف. وذلك يكون فيها من قبل القوة النفسانية التي تحتبس فيها اولاً. والاماكن والجسد الذي تحتبس فيه هذه القوة تكون علل الاختلاف. (762a25)	

These examples provide sufficient proof of the difference between these versions (esp. Qusṭā and *De Generatione Animalium*). From this may be concluded that Qusṭā was not influenced by them. But he may have acquired direct knowledge of this theory from the zoological works of Aristotle himself. According to an-Nadīm (*o.c.* I, p. 251; Dodge II, p. 604), Qusṭā translated the first section of his *De Generatione et Corruptione*.

For Hebrew authors referring to spontaneous generation see Gershon b. Solomon of Arles, *Sefer Sha'ar ha-Shamayyim*, fol. 22a (transl. Bodenheimer p. 157, no. 8) and Levi b. Gershom, *Sefer Milchamot ha-Shem*, Bk. 5, part 3, ch. 4.

For its occurrence in Syriac literature see Job of Edessa, *Book of Treasures*, Disc. II, ch. 17.

- 351 Worms: According to Rodemer (*o.c.*, p. 22), worms, and especially intestinal worms, played a very important part in the theory of spontaneous generation; ancient authors divided them into three kinds and considered them to be part of the insects. Cf. Aristotle (HA 551a8–12; transl. Peck): “Others are produced in residues . . . an example is the so-called helminths (intestinal worms), of which there are three kinds.”

For an extensive list of references to ancient authors see Rodemer *o.c.*, bibl. nos. 322–39.

The popularity of this theory having to do with insects is not so amazing, since their way of reproduction is very difficult to observe for the naked human eye; cf. Rodemer *o.c.*, p. 18; Ullmann, *Natur- und Geheimwissenschaften*, p. 54; Farley *o.c.*, pp. 4, 5, 190–2 (tapeworm, cf. Qusṭā l. 439).

- 352 Tapeworms: Lane VIII, p. 2987: “Worms in the belly; is a name of the tapeworm, because each joint of it resembles a grain, or seed, of the gourd”; Dozy I, p. 240: “vers cucurbitains; on les a appelés ainsi parce qu'ils ressemblent aux graines des courges.”

- 353 Putrefaction: Rodemer (*o.c.*, p. 22): “Nach Hippokrates (*De morbis* IV) und Aristoteles (HA 551a1) entstehen sie (die Eingeweidewürmer) alle durch *generatio aequivoca* in den Eingeweiden von Tieren und Menschen aus den faulenden Nahrungssäften, aus dem Kot im Darm und anderen faulenden Substanzen”; cf. Paul IV, ch. 57, 1: “All worms originate from coarse, thick and phlegmatic matter and from the appropriate putrefaction.”

For parallels in Arabic zoological literature see Ullmann *o.c.*, p. 54, n. 4.

- 354 According to Aristotle, heat and moisture are the cause of putrefaction; see HA 570a15ff.

- 355 According to Aristotle, the cause of the differences between the various animals lies in the physical composition of the animals concerned, involving the factors of heat and cold, fluidity and solidity, and in the environment where the process of generation takes place; see GA 732a25ff., 732b28ff., 762a27. Cf. Job of Edessa *o.c.*, Disc. II, ch. 16; he distinguishes between essential differences in the various species resulting from different quantities of heat, cold, humidity and dryness, and accidental differences originating from accidental, external factors, such as food, climate, etc.

- 356 Bugs: See note 289.

- 357 Reptiles: See Rodemer (*o.c.*, p. 17): “Eine solche Bildung durch Urzeugung nimmt Aristoteles an bei einem grossen Teil der Insekten, bei allen Schalthieren und bei einigen Fischen. Darin folgt ihm fast das ganze Altertum und

Mittelalter. Andere Forscher dehnen die Vorstellung von der Urzeugung über den Kreis der von Aristoteles angegebenen Gattungen aus." For insects see Aristotle HA 556b22–557a3; for shellfish HA 546b17–18; for fish HA 569a10–30. For later authors see Kraus, *Jābir*, pp. 107–8; Ullmann, *o.c.*, p. 55.

358 According to Aristotle HA VIII, 28, the place and climate influence the form and size of the body of animals; cf. note 355. Gershon b. Solomon *o.c.*, fol. 30b (Bodenheimer p. 183, no. 208; p. 184, no. 214) expresses the same idea as Aristotle.

359 Species: Cf. Ullmann, *Natur- und Geheimwissenschaften*, p. 56 *Der Artbegriff*: "Die arabischen Autoren haben nie klar erkannt, was das Wesen einer Tierart ausmacht." And p. 57: "Der Unklarheit des Begriffes entspricht die terminologische Unsicherheit. Nach der Regel ist *jins* der Ausdruck für die Gattung, *nau* der für die Art. In der Wirklichkeit werden diese Begriffe aber vertauscht, und oft ist mit *jins* die Art bezeichnet."

360 Compare Qusṭā's statement in his *Book on Phlegm*, as cited by ar-Rāzī XI, p. 294, to the two causes referred to, namely, the climate and the food; in that treatise a soft, hot climate and a moist, delicate body are mentioned as the elements in which the *dracunculus* is born.

From Qusṭā's saying (cited by ar-Rāzī *l.c.*): "In Samarrā I once saw a man in whose body forty veins had formed, but he got rid of all of them," Ullmann (*Medicine*, p. 82) derives that Qusṭā held the theory that the *dracunculus* develops as the result of hot phlegm that has become sharp. A deduction not further explained by Ullmann, and thus rather puzzling.

According to Ibn Sīnā (IV, p. 139), this theory was held by Galen: "He (Galen) said that the cause is a hot, bad and melancholic blood or blunt phlegm."

In l. 432 Qusṭā refers to the putrefaction (arising from the rotting process of different kinds of food) as causing the birth of the *dracunculus*.

Qusṭā's saying in ll. 454–5: "... cause this worm to appear in the flesh and to become an animal like the other animals born in the stomach," is in my opinion a clear proof of the fact that Qusṭā defines the *dracunculus* as an animal. Assuming this supposition as correct, it clearly refutes Ullmann's statement (*Medicine*, p. 83): "They (the Arabs) were not even aware of the animal nature of the disease."

361 Milk: Diosc. Wellmann II, 70/Berendes II, 75–78 mentions the different kinds of milk and their healing powers; see also Oribasius, *Coll. Med* XV, 2; at-Ṭabarī pp. 386–7; ar-Rāzī XXIB, no. 759; Ibn Sīnā II, pp. 355–8; Maimonides, *Regimen Sanitatis*, Part 1, no. 8. Paul I, chs. 86–88, gives a detailed account of the positive and negative properties of the different kinds of milk; cf. Berendes' remark (Paulos von Aegina I, ch. 86): "Die Hippokratiker halten die Milch der Ziegen, Stuten und Eselinnen für öffnend, die der Kühe und Schafe dagegen für stopfend. Im ganzen legten die alten Aerzte der Milch als Nahrungsmittel nicht die Wichtigkeit bei, die sie nach ihrer Zusammensetzung verdient und heutzutage ihr gezollt wird."

362 Cheese: Diosc. Wellmann II, 71/Berendes II, 79–80; Oribasius *o.c.*, *l.c.*; Paul I, ch. 89; at-Ṭabarī pp. 387–8; ar-Rāzī XX, no. 216; Ibn Sīnā I, pp. 286–7; Maimonides *l.c.*

363 Oxymel: See note 19.

- 364 Electuary: Ullmann, *Medizin* pp. 295–6, 349 *itrīful*: “Bez. eines Myrobalanen enthaltenden Elektuariums.”
- 365 Yellow myrobalan: Schmucker no. 787 *halīlaj/ihlīlaj asfar*: “*Terminalia citrina* ROXB.”; al-Bīrūnī p. 329, no. 16; Maimonides, *Sefer ha-Qatseret* 32⁷; Kroner, *Die Haemorrhoiden*, pp. 694–5, gives a detailed account of the different opinions concerning the number of myrobalans, namely, three, four or five.
- 366 Chebulic myrobalan: Kroner (*o.c.*, *l.c.*) states that the term *ihlīlaj* can be a collective name referring to one species, which one being unclear. I interpreted Qusṭā’s *halīlaj* as *halīlaj kābulī* (*Terminalia chebula* RETZ.; Schmucker no. 787).
- 367 Emblic myrobalan: Schmucker no. 67 *amlaj*: “Zu den “*ihlīlajāt* zählend”; see notes 365 and 366.
- 368 Secacul: Schmucker no. 432 *shaqāqul*: “wohl *Pastinaca schekakul* (Umbelliferae) (= *P. dissecta*), *Malabaita secacul* u.a.”; Issa p. 135, no 17; al-Bīrūnī p. 354, no. 45; Maimonides no. 361.
- 369 Pills: Ullman, *Medizin*, p. 297 *ḥabb*, Plur. *ḥubūb*: “allgemeine Bezeichnung für Pille.”
- 370 *Shabyār*: Ullmann, *Medizin*, p. 298: “(aus pers. *shab-yār* ‘Freund der Nacht’, entspr. *προσθετόν*) Bez. eines besonders während des Schlafes verwendeten Zäpfchens”; Vullers II, p. 409: “(noctis amicus) nom. electuarii vel potionis somniferae.”
- 371 Gold: E.I.² II, p. 214 *s.v.* *dhahab* (A.S. Ehrenkreutz); Goltz pp. 256, 294; Siggel p. 80.
- 372 Bdelium: See note 282.
- 373 Powder: Ullman, *Medizin*, p. 297 *saḥūf*: “Puder, Pulver.”
- 374 Chebulic myrobalan: See note 366.
- 375 Fennel: See note 244.
- 376 Sugar: See notes 14 and 154.
- 377 Caper plant: WKAS I, p. 24 *kabar*: “*Capers, Capparis spinosa* L.”; Schmucker no. 619; Flora I, p. 322 ff.; Asaph p. 173: “Der Saft der frischen Blätter der *Capparis spinosa* heilt Schmerzen, öffnet Verstopfung und tötet die Würmer”; Diosc. Wellmann II, 173/Berendes II, 204; Diosc. Triumphans II, 156.
- 378 Decoction: Al-Qalānisī p. 245 *ṭabīḥ*: “Abkochung, Dekokt.”
- 379 Collyria: See note 187.
- 380 Caper plant: See note 377.
- 381 Dill: See note 249.
- 382 Fennel: See note 244.
- 383 Dandelion: Schmucker no. 170 *ṭalḥashqūn, tarḥashqūn*: “*Cichorium intybus* L. (Liguliflorae der Compositae), Gemeine Wegwarte, oder die zu derselben Gattung zählende *C. endivia* L., Endivie”; Issa p. 177, no. 15; Ibn al-Quff no. 166 mentions *hindibā’ barrī* as a synonym (cf. MSS B, C, D); Maimonides no. 175; Flora I, p. 434.
- 384 Water mint: See note 297.
- 385 Mountain mint: See note 318.

386 Rue: See note 93.

387 Peppermint: Schmucker no. 772 *na^cna^c*: “*Mentha* L. (Labiatae), Minze”; al-Bīrūnī p. 322, no. 22; Maimonides no. 256; *Flora* II, p. 65 ff.; Diosc. Wellmann III, 34/Berendes III, 36; Diosc. Triumphans III, 34.

388 Boiling of the humours: Ullmann (*Medizin*, p. 97) speaking about the Greek humoral physiology which had a dominating influence on the Arabs, states: “Die aufgenommene und verflüssigte Nahrung unterliegt einem Stoffwechselprozess, der unter dem Einfluss der “eingepflanzten Wärme” vor sich geht. Das Produkt dieses Stoffwechselprozesses, der als “Kochung” oder “Ausreifung” (*indāy*) gedacht wird, sind die vier Kardinalsäfte, das Blut, der Schleim, die gelbe Galle und die schwarze Galle.”

389 State of balance: cf. Ullmann *o.c.*, *l.c.*: “Wenn die Säfte und die in ihnen vertretenen Primärqualitäten in Gleichmass sind (*i^ctidāl al-mizāy*), so ist der Mensch gesund. Dominiert einer der Säfte bzw. eine Qualität, so ist das Gleichgewicht gestört, es herrscht eine Dyskrasie (*sū³ al-mizāy*), die sich als Krankheit äussert.”

For the preventive treatment of the *dracunculus medinensis*, as described in this chapter, there is no exact counterpart to be found in: Alexander II, p. 586 ff. (*Brief über die Eingeweidewürmer*); Oribasius, *Ad Eunapium* IV, 89; Paul IV, chs. 57–58; ar-Rāzī XI, pp. 290–6; Ibn Sīnā IV, p. 139.

Ibn Sīnā, for instance, mentions as a prophylaxis: 1. bleeding, 2. purifying the blood by myrobalan, epithyme and especially coccus-pills, 3. taking a compound of myrobalans with senna and fumitory, 4. moistening the body with fresh, moist foodstuff, 5. bathing.

That there were many different drugs for this disease is attested to by Alexander who, after mentioning many remedies, remarks (II, p. 598): “Die Alten haben noch eine unzählige Menge anderer Mittel angegeben.”

Chapter 14

390 Qustā's statement that Galen does not mention the *dracunculus medinensis* is not correct; Galen does refer to it, saying (*De loc. aff.* VI, 3; Kühn VIII, p. 393) that he heard from many people that in a place in Arabia there were “little snakes” (*drakontia*) that had a “nerve-like” nature similar to intestinal worms in colour and thickness. He says that he himself has never seen them and can therefore say nothing exactly either about their origin or their nature.

Cf. Ibn Sīnā (IV, p. 139): “Galen has said that he has not seen the worm, nor any complication of it. He said the cause is a hot, bad and melancholic blood or burnt phlegm.” See also Ullmann, *Medicine*, pp. 81–2 and commentary, note 349.

391 Soranus: See Ullmann (*o.c.*, p. 15): “It was perhaps only by chance that Soranus was not translated into Arabic. Soranus who lived in Ephesus at the beginning of the second century, was the most significant representative of the “methodical” school and his work was the most important gynaecological writing of antiquity. In the Western medieval world, Soranus always ranked third after Galen and Hippocrates; in the East, on the other hand, only the most meagre bits of information were associated with his name”; cf. Steinschneider, *Die arabischen Übersetzungen*, pp. 485–6; Ullmann,

Medizin, pp. 76–8; Sezgin, *GAS* III, p. 61.

- 392 Leonidas: A famous physician from Alexandria towards the end of the first century A.D. Fragments from his writings preserved by Oribasius, Aetius and Paul show his importance as a surgeon; cf. Pauly-Wissowa, *Realencyklopädie*, p. 2034, no. 18.
- 393 Qustā's statement about Soranus and Leonidas is most likely derived from Paul IV, 58; he seems to be the only one who transmits this tradition. A comparison with Qustā will clarify this supposition:

Qustā

فاما سورانوس فانه لم ير ان هذا العرق
حيوان وانه يتحرك بل رأى انه يتوهم
انه متحرك وهو بالحقيقة غير متحرك.
فاما لاونيدوس وغيره ممن اتى بعده
فانهم رأوا

Paul

ὁδὲ Σωρανὸς οὐδὲ ζῶον τὴν ἀρχὴν
ἀλλὰ νευρίου τινὸς σύστασιν οἶεται
το δρακόντιον δόκησιν μόνον ἐμ-
ποιούντος τοῦ κινεῖσθαι. εἴτε δὲ τοῦ-
το εἴτε το πρότερον, καὶ τῷ Σωρανῷ
καὶ τῷ Λεωνίδῃ καὶ ἑτέροις ἔδοξε
...

Translation:

Qustā

Soranus thought that this worm is not an animal and that it does not move; it only seems to move but does not move in reality. Leonidas and other physicians after him thought ...

Paul

Soranus, however, believes that the little dragon is not an animal at all, but a nervous constitution (nerve) which only seems to move. Anyhow, both Soranus and Leonidas, as well as others recommended ...

Paul's implicit statement that Leonidas believed that this worm was an animal is made explicit by Qustā; see note 349.

Ibn Sīnā (IV, p. 139) states: "This "vein" appears probably moving so that some people thought it so and even said that it multiplies. Some think that it is a collection of nerve fibres that enlarges and rots."

- 394 A comparison with Paul (*l.c.*) shows the similarity with Qustā:

Qustā

فاما لاونيدوس وغيره ممن اتى بعده فانهم
رأوا انه حيوان يتولد في لحم العضل واكثر
تولده يكون في السواعد والاعضاء والسوق
والافخاذ. فاما الصبيان فانه يتولد مع ذلك
ايضا منهم في الظهر والصدر تحت الجلد .

Paul

Ἐν Ἰνδικῇ καὶ τοῖς ἄνω τῆς Αἰγύπτου
τόποις τὰ λεγόμενα δρακόντια
συνίστανται, καθάπερ ἐλμινθώδη
τινὰ ζῶα, ἐν τοῖς μυώδεσι τῶν μορί-
ων, οἷον βραχίοσι, μηροῖς, κνήμαις,
ἐπὶ δὲ τῶν παιδίων καὶ πλευροῖς, ὑπὸ
τῷ δερματι συνιστάμενα καὶ κινού-
μενα σαφῶς.

*Translation:**Qustā*

Leonidas and other physicians after him thought that it is an animal which originates in the flesh of the muscles, mostly in the forearms and upperarms, in the legs and thighs. As for boys, it also originates in the back and chest under the skin.

Paul

In India and Upper Egypt the so-called little dragons come into being, wormlike animals as it were, which originate in the muscular parts of the body, such as the arms, thighs, and shins (and in the case of children also in the sides) under the skin, and clearly move.

Ar-Rāzī (XI, pp. 291, 295) cites Paul's version explicitly; ar-Rāzī (XI, p. 290), citing the *Kitāb al-ʿalāmāt* states: "The worm appears under the skin, crawling as a snake, mostly in legs, loins and sides" (cf. note 390). Ibn Sīnā (IV, p. 139) says: "It appears mostly on the calf, but I have seen it on the hands and sides."

These citations clearly show that the reading of MSS B, C, and D stating that it also occurs in legs and thighs is to be preferred above the reading of MS A stating that it does not occur in legs and thighs.

395 Foment: Ullmann, *Medizin*, p. 299 *naṭūl*: "feuchter, warmer Umschlag."

Paul (*l.c.*) gives the same advice, as a comparison shows:

Qustā

وقد اتفق كلهم في علاجه على انه ينبغي
ان ينطل العضو الذي ظهر فيه بالما
الحار نطلا دائما حتى يخرج طرفه،
فاذا خرج يسلا رقيقا

Paul

παρακελεύονται τὸ μόριον εἰς ὕδωρ
καθεῖναι θερμόν, ἵνα το δρακόντιον
θαλπόμενον πρὸς τὸ ἐκτὸς χωρῇ,
κᾶπειτα τοῖς δακτύλοις αὐτὸ κατὰ
μέρος ἐξέλκειν.

*Translation:**Qustā*

All these physicians agree concerning its treatment that one must constantly foment the limb in which the worm appears with warm water until its end comes out. And when it comes out one must softly pull it.

Paul

They advise putting the limb in warm water so that the little dragon gets warm and goes out; thereupon (they recommend) to pull it out softly with the fingers.

Ar-Rāzī (XI, pp. 291, 295–6) brings Paul's version as a citation. Ar-Rāzī (p. 294), citing Qustā's *Book on Phlegm*, gives the following advice: "First of all one must rub the place with oil of gilliflower, jasmine or ben in order to make it easy for the worm to come out of the body. Then one must be careful that it does not break off." Ibn Sīnā (IV, p. 139) says that sometimes

it is impossible to get it out with fomentations; in that case one must smear the place with oil of gillyflower, jasmine or ben.

396 Paul (*l.c.*) gives the same advice, as a comparison will make clear:

Qustā

فان لم بجب الخروج شدّ في طرفه رصاصة
بخيطة وترك لتجذبه الرصاصة بثقلها فتحطّه
الى اسفل وتسله شيئا شيئا.

Paul

ἐλκόμενον δὲ το δρακοντίον ἀλγηδό-
νας ἐμποιεῖ, καὶ μάλιστα ὅταν ἀπορ-
ραγείη. διὸ τινὲς μὲν φασὶ χρῆναι
μολίβδιον ἐξαρτᾶν τοῦ δρακοντίου,
ἵνα μὴ ἀθρόως ἀλλὰ κατὰ μέρος τῷ
βάρει τοῦ μολίβδιου ἢ ἀπόπτωσις αὐ-
τοῦ γένηται.

Translation:

Qustā

But if it does not want to come out
(completely), one should tie a piece
of lead with a thread to its end.
Then one should leave it alone so
that the piece of lead can pull it out
by its weight little by little.

Paul

When one pulls the little dragon
out, it causes pain; especially when
it tears off. Therefore some advice
tying a piece of lead to the little dra-
gon, so that it will not be pulled out
at once, but slowly by the weight of
the piece of lead.

Ar-Rāzī (XI, p. 291) quotes Paul's advice explicitly. Ibn Sīnā (IV, p. 139) says that a piece of lead is most suitable to get the *dracunculus* out, by using its weight as a pulling force.

397 Dressings: See note 157.

398 Barley: Schmucker no. 431 *shaʿir*: "Hordeum L. (Gramineae), Gerste"; al-Bīrūnī p. 353, no. 41; Asaph p. 88; Flora I, p. 707 ff.; Diosc. Wellmann II, 86/Berendes II, 108; Diosc. Triumphans II, 72; see note 12 as well.

399 Wheat: See note 189.

400 Fenugreek: Schmucker no. 247 *ḥulba*: "Trigonella foenum graecum L. (Papilionaceae), Bockshornklee, griechisches Heu"; Issa p. 183, no. 5; al-Bīrūnī p. 127, no. 62; Ibn al-Quff no. 70; Maimonides no. 153; Flora II, pp. 475–81; Diosc. Wellmann II, 102/Berendes II, 124; Diosc. Triumphans II, 86; MS A's marginal note *shanbalīla ast* is Persian for: "is fenugreek"; cf. Vullers II, p. 469: "planta, cuius flos flavus similis est flori mali aurantiae et acris odiris, aliis etiam . . . ar. *julba*."

401 Figs: See notes 178 and 310.

402 Camomile: See note 100.

For a counterpart of this advice from Qustā, cf. Paul *l.c.*:

Qusṭā

ويستعمل مع ذلك ايضا اقعاد العليل في
الماء الحار ويضمّد الموضع بالاضمّة
المحلّلة كالضماد المتخذ من دقيّس الشعير
ودقيّس الحنطة والحلبة وتين وبابونج
وما اشبه ذلك.

Paul

... καὶ τῷ Σωρανῶ καὶ τῷ Λεωνίδῃ
καὶ ἑτέροις ἔδοξε προσαντλήσει
θερμῇ καὶ καταπλάσμασι πεπτικοῖς
ἐπὶ τούτων κεχρηῆσθαι τοῖς διὰ
μελικράτου καὶ ἁλεῦρου πυρίνου ἢ
κριθίνου.

*Translation:**Qusṭā*

Besides one should make the patient
sit in warm water and bind the place
(of the wound) with dissolving
dressings such as the one prepared
from meal of barley, meal of wheat,
fenugreek, figs, camomile and the
like.

Paul

... both Soranus and Leonidas, as
well as others, recommended pour-
ing out warm water and using
plasters prepared from mead, meal
of wheat or barley.

- 403 Plaster: Ullmann, *Medizin*, p. 299 *lazūq*: “Klebeplaster, Heftpflaster.”
404 Laurel: See note 167.
405 Tamarisk: Schmucker no. 470 *ṭarfā, ṭarfā*: “Tamarax (Tamaricaceae),
Tamariske”; al-Bīrūnī p. 215, no. 11; Asaph p. 168, no. 123; Flora III, p.
198 ff.; Diosc. Wellmann I, 87 / Berendes I, 116; Diosc. Triumphans I, 56.
For a parallel to this advice of dissolving plasters see Paul *l.c.*:

Qusṭā

ويلزق عليه لزوقات محلّلة كاللوزق المنسوب
الى الغار والى الطرفاء وغير ذلك مما
شابهه.

Paul

καὶ ἐμπλάσθρου δὲ χρῆσιν ἔσθ' ὅτε
δοκιμάζουσιν τῆς ὁμοίας δυνάμεως.
ἁρμόσοι δ' ἂν καὶ ἡ διὰ δαφνίδων καὶ
ἡ διὰ μέλιτος.

*Translation:**Qusṭā*

One should also stick dissolving
plasters on the wound, such as the
one named after the laurel, the
tamarisk and other, similar ones.

Paul

They also approve of the use of
plasters having the same effect. Ap-
propriate are the ones prepared
from laurel and the ones prepared
from honey.

Ar-Rāzī (p. 296) quotes Paul's advice explicitly.

- 406 For a parallel see Paul *l.c.*:

Qusṭā

فان انقطع العرق المدني وتفتح موضعه
شق عنه وعولج كما يعالج سائر
الجراحات .

Paul

διαπυήσεως δὲ γενομένης, εἰ μὴ ἐκ-
πέσοι, διαιρείσθω τὸ δέρμα, καὶ γυμ-
νωθὲν ἀφαιρείσθω τὸ περιεχόμενον,
καὶ διατομούσθω τὸ δέρμα καὶ ἡ
ἀκόλουθος πυοποιὸς ἐπιμέλεια
δοκιμαζέσθω.

Translation:

Qusṭā

If, however, the *dracunculus medinen-
sis* breaks off and the place is open,
the rest should be taken out and the
wound should be treated as other
wounds.

Paul

If, however, the wound begins to
fester and the little body does not
fall out, the skin should be opened
and the uncovered little body taken
out. When the skin is cut open, one
should give it the proved treatment
in the case of suppuration.

Ar-Rāzī (XI, p. 291, citing Paul) states:

فان انقطع او لم يخرج بط حتى يوصل
اليه ويخرج ثم يعالج بعلاج الجراحات .

If it breaks off or does not come out,
an incision should be made so that
one can reach it and take it out.
Then it should be treated as other
wounds.

Ibn Sīnā (IV, p. 140) says:

فان انقطع وكمن لم يكن بد من البط عنه
الى ان يصاد كرة اخرى ثم يخرج بالرفق
ويعالج الموضع بعلاجات الجراحات .

If it breaks off and (what is left be-
hind) is hidden, it is necessary to
make an incision until one gets hold
of it a second time. Then one should
take it out softly and treat the place
as other wounds.

Qusṭā's discussion of the treatment of the *dracunculus medinensis*, as developed in this chapter has a remarkable similarity, as the present study shows, to that of Paul (bk. IV, ch. 58) with regard to the structure of the whole chapter, in which he discusses the same main points.

Also the remedies recommended by both are basically the same. From this the inference follows that Paul's text was Qusṭā's major source in his compilation of this chapter. Ar-Rāzī's quotations from Paul may indirectly strengthen this supposition (see note 306). The texts cited from ar-Rāzī and Ibn Sīnā show clearly that Paul's statements about the treatment of the

dracunculus medinensis played an important part in their discussion of the same subject; see notes 394–6.

- 407 Qusṭā implicitly refers here to his conviction of the possibility of the existence of infection (*i‘dā’*) as a possible cause of diseases. He gives the following definition of infection in his *Kitāb fī al-i‘dā’* (Ed. and transl. by Fāhndrich, p. 13, no. 3):

فأقول : إنَّ الاعداء قدح ينقدح
من بدن مريض في بدن صحيح
فيعرض في البدن الصحيح من
المرض مثل ما يعرض في البدن
المريض ، فهذا حدّ الاعداء .

So führe ich aus: Die Ansteckung ist ein Funke, der von einem kranken auf einen gesunden Körper überspringt, worauf im gesunden Körper die gleiche Krankheit entsteht wie im kranken. Das ist die Definition von Ansteckung.

The discussion about the possibility of infection began early in Islam and became a central issue in the context of the dogma of God’s omnipotence. In the *ḥadīth* we find a controversial picture with sayings both affirming and denying the existence of *i‘dā’*; cf. Buḥārī, *Ṣaḥīḥ*, *ṭibb* 19. 25. 45. 53. 54. These controversial sayings inspired theological discussions and attempts at harmonisation.

Above all, however, the problem of infection was discussed from a medical point of view in special monographs devoted to this subject after the occurrence of the plague.

For an extensive treatment of this question see Seidel, *Die Lehre von der Kontagion*, Ullmann, *Medizin*, pp. 242–50, and especially Conrad, *Epidemic Disease*.

- 408 In using the expression “ascribed”, the copyist of MS A expresses some reservation as to the authorship of this treatise. The following points, however, show clearly that Qusṭā is the author of this text:

1. All the MSS (MS A included) mention Qusṭā as the author at the beginning of the treatise.
2. MSS B, C, D, do not share the reservation expressed in MS A at the end.
3. The existence of certain terminological and ideological parallels between this text and other texts from the hand of Qusṭā (see p. 5).

INDEX OF TERMS

a. Arabic

36, 201, 213, 221, 225, 232	أُذُن	444	تربة
175	أُذُنِينَ	59, 124, 146, 151, 165	تعَب
275	أَرْض	126	التعب الكثير
446	الأرض الحمراء	454, 456	تمور
445	الأرض الخصبة		
446	الأرض الرمادية	271	ثِيَجَن
447	الأرض السوداء	87, 191, 196, 198	ثَقُل
54, 57	أَكُل	226	ثقل السمع
345	أكل الأشياء المالحة	233	ثَقِيل
175, 239, 249	أَنْف		
381, 383	أَنِيَة	253	جَبْهَة
		365	اججرة
237	بحوحة	155	جَذَب
219, 261	بخار	154	جذب الغذاء
136	بخارات	226	مجرّبة
135	بخارات كثيرة متكاثفة	371, 440	جرجس
143	البخارات المحتقنة	487	جراحات
17, 45, 49, 52, 60 e.p.	بَدَن	441	جردون
93, 94, 153, 154	أبدان	240	مجارى الحلق
83	الأبدان الممتلئة	239	المجارى المشاشية
37, 200	بَرْد	339	جفاف الفم
84, 190, 193, 218	برودة	138, 478	جِلْد
384	برادة	314	جمود
34, 40, 451	براغيث	176, 302, 303	جواهر
27	بواسير	274	جواهر العين
323	بشاعة	315	جواهر رقيق لطيف
137	بطالة	306	جواهر
53, 430, 438, 456	بَطْن	319	جواهر ردة
371	بعوض	343	جوف
371, 440, 452	بَق		
442	بنات وردان	430, 439	حَبّ القرع
107, 110	ابهام	395	محجمة
20, 32, 46, 59	باه	279	حدة
		189	حدة الاختلاط وحرارتها
317	تَيْن	92, 105, 112, 124, 192	حرارة

137	حرارة غريبة خارجة عن طبيعتها	175	خللا
337	حرارة مفرطة		
434, 438	حرارة ورطوبة	1, 16, 19, 31, 45 e.p.	تدبير
48	الحَرّ المفرط	18	تدبير الابدان
284, 293	حريرة	195	تدبيرا حارًا
22, 26, 27, 42, 43, 247 e.p.	تحرّز	190	داخل الاذن
57, 59, 71, 73, 84, 90	حركة	154	داخل الاعضاء
48	الحركة الدائمة	249, 251	دخان
80	حركة سريعة	380	دخان النار
94	حركة كثيرة	383	دساتيج
75, 78, 79, 189	الحركة المفرطة	273	دفاق التبن
78	حركات البدن	33, 34, 131	ذلك
338	حركات شديدة	127, 128, 155	ذلك القدم
77, 114	حسّ الم	135, 140, 149, 160	ذلك شديد
48	حقوين	127	ذلك شديد مفرط الشدة
80	احتكاك	285	دمعة
147	تحليل	79, 238, 239	دماغ
122	حَلَب	163, 396	دم
111, 458	حمام	86	دم البدن
459	حمامات	85	دما رقيقا لطيفا
191, 196	حمرة	396	دما صالحا
88	حَمَل	430	دُود
339	حَنَك		
25, 41, 335	احتيال	313	ذوبان الثلج والجليد
77, 81, 98, 130, 144, 146	حال		
127, 139, 160	احوال	196, 256	رأس
27, 382, 420, 430, 438, 441	حيات	481	رصاصه
433, 446	حيوان	84	رطوبة
442, 444, 445, 446	حيوانات	134, 152	رطوبة العين
		238	رطوبة فضلية
215	خلط لزج	243	رطوبات فضلية
72, 83, 85, 89 e.p.	اخلاط	134, 152	رفق ولين
225	اخلاط لزجة	379, 380	رقود
124	اخلاط رديئة حارة	377	مرقد
94	اخلاطها لطيفة دقيقة	278	رَمَد
255	اختلاف	273, 398	رماد
443	اختلاف ترب البلدان	273	رَمَل
437	اختلاف الحيوان	176, 177	ريح
25	اختلاف المياه	173	الريح الشديد
38, 39, 236, 272	اختلاف الهوا	225	ريح غليظة

224	ريح و خلط لرج	310	شتاء
198	ريح مستكنة في الاذن	379, 380	اشجار
216	ريح مستكنة في موضع السمع	106, 107, 166, 175	شدّ
215	ريح استكنت في موضع السمع	106	شدّا متساويا
39, 180, 182, 188	رياح	148	شدّا شديدا
195	رياح جنوبية	148	شدّ اليد على الاعضاء
21, 35, 186	الرياح المختلفة	146	تشديد بدنه
187, 245	الرياح الحارّة والباردة	336	شرب الماء
194	الرياح الهابّة شمالية	126	شرب الماء البارد
36	الرياح الشديدة الحرّ والبرد	343	شرب نبیذ كثير
170	الرياح المفرطة في الحرّ والبرد	158	شارب
169	الرياح المختلفة المفرطة البرد والحرارة	19, 31, 46	شراب
19, 58, 59, 71, 109, 142	راحة	312, 317	شمس
144	راحة بينة	384	شمع
137	راحة كثيرة	153	مشائخ
181, 300, 302, 303	رائحة		
308	رائحة كريهة	60	صبّ الماء الفاتر
247, 253	روائح	238, 240, 241	انصباب
145	رياضة مفرطة	109, 130, 133	اصابع
		153, 477	صبيان
117	زبد	378	صحارى
37, 172, 180, 235, 237 e.p.	زكام	48, 241, 262, 478	صدّر
386	زنابير	297, 298	صدغين
87, 91, 147, 436	زيادة	80	تصادم
86	زيادة بينة	131	صعدا وسفلا
		326	تصفية الماء
99	اسباب الاعياء	48	صُلب
92	اسخان	147	تصليب
151	تسخن	40, 115	اصلح
97	سخونة	25, 76, 170, 187, 320	اصلاح
477	سواعد	40, 317	اصلاح المياه الفاصدة
37, 172, 235, 237, 243, 262	سعال	390	صائم
242, 260	سعال شديد	310	صيف
199	مسلك		
77	سلامة	441	ضَبّ
495	سلامة النفس	116	ضغط شديد
395, 397, 404, 406, 415, 417	سمّ		
409, 412	سموم	7	طبيب
233	سَمْع	11	اطبّا
244	سوّ مزاج حارّ	97, 275	طبيعة
477	سوق	107	اطراف اصابعه

110	اطراف الاصابع	82, 88	الاعياء المثلّ
131	اطراف الاصابع والابهام	83	الاعياء المسخن
302, 303	طعم	82, 90	الاعياء الممدّد
308	طعم ردى	149	الاعياء المتولّد من التعب
322, 334	طعم الماء	38, 172, 173, 272 e.p.	عين
19, 31, 46, 52, 125, 126, 328	طعام	280	اعين
402	اطعمة		
193, 195	مطعم	39, 173, 272, 276, 278, 281	غبار
198	طين	137	غبار كثير
317	طين	272	غبار تراب الارض
		50, 348	غذا
478	ظهر	137	غذا كثير
155	ظاهر البدن	337	غذا جاف يابس
191	ظاهر الاذن	123	الغذاء المعتدل في جوهره وكيفيته
		123, 349, 454, 457	اغذية
47	اعتدال	71	اغتذاء
41, 245, 336	عدم الماء	105, 114, 115, 127, 128, 131, 132 e.p.	غمز
278	عرّض	105, 130, 134	غامز
184	عوارض	33, 34, 142, 160	تغميز
27, 43, 44, 426 e.p.	عِرْق مدني	101	التغميز الرقيق
89, 91	عروق		
281, 418	عَرَق	112, 121	فتورة
78	عصب	477	افخاذ
477	اعضاد	457	فساد
78, 80, 162	عضل	242, 243	فَضْل
468	عضو من اعضاء البدن	53	فضل الغذاء
61, 91, 93, 132, 140, 165	اعضاء	163	الفضل البخاري الحارّ
433	العَقْن	419	فضول
432	العفونة المعتدلة	256	الفضول الغليظة
137	تعقّن	175	فم
433, 447	التعقّن	339	فناء الرطوبة
451	عقرب		
420, 442	عقارب	323	قَبْض
153	المعمرين	232	قَدَح
190	عُمُق	392	قدح زجاج
174	عمامة	270	قَدَر
49	عمائم	121, 265	مقدار
64	عنصر	33, 34	قَدَم
20, 32, 73, 74, 76 e.p.	اعياء	118	قارورة
83, 98	الاعياء المؤلم	383	قواريح

241	قصبة الرئة	55	ماء بارد
177	قطنة		
121	قعود	265, 459, 479, 483	ماء حارّ
482	اقعاد العليل في الماء الحارّ	60, 116, 118, 121	ماء فاتر
260	قَمْع	304	ماء بورقي
439	قَمَل	304	ماء قفري
86, 88	قوة البدن	304	ماء كبريتي
232	قيح	304	ماء نظروني
		111	الماء المعتدل الحرارة
132	كيس على الاعضاء	25, 40, 311, 313, 316 e.p.	مياه
138	تكاثف الجلد وتلبّده	332	مياه ردتة
324, 325	كدورة	40, 318	مياه فاسدة
105, 107, 108, 111 e.p.	كف	311	مياه محمودة نافعة
399	لباب الخبز	386	نخل
457	ألبان	180, 240	نزلة
106, 108, 455	لحم	242	نزلة الى الصدر
476	لحم العضل	37, 172, 235, 237, 247	نوازل
401	اللسع	379	نزول
42, 388	لسع الهوامّ	467	انضاج الاخلاط
416	لسع جميع الهوامّ	479	نظلا دائما
408	ملسوع	285	ناظر
357	لسان	152	انعاش
341	لهاة	240	نغانغ
339	لهوات	130	انتفاخ
196, 302, 303	لون	467	منافس البدن
308	لون كدر	155, 266	منفعة
		160, 213	منفعة بينة
32, 299	امتحان المياه المختلفة	436	نقصان
60	مَرخ	311	نقايع
116	تمريخ	20, 31, 46, 58, 71, 124	نوم
60	مزاج		
244	مزاج حارّ وبارد	21, 35, 36, 168, 186 e.p.	هبوب
109	مسحه البدن مسحا واحدا	22, 42, 363, 366, 367 e.p.	هوامّ
120	مسحا رقيقا	370	هوام مؤذية
140	مَسَح بقوة صالحة	27	هيجان البواسير
163	مَنثني	35, 38, 39, 47, 194, 195, 453	هوا
311	امطار	338	الهواء الحارّ
323, 346	ملوحة	193	الهواء المحيط
25, 41, 205, 270	ماء		

171, 186, 188, 189 c.p.	وجع الاذن	89	اوعية
226	اوجاع الاذن	85	اوعية البدن
266	اوجاع السعال	164	وقوف
205	ورق	161	وقوفاً كثيراً
111	وسط الراحة		
226, 248, 255, 261, 265, 285	صفة	441	يربوع
255	صفات	310	ينبوع

b. English

(The number between brackets refers to the notes of the commentary)

- acacia 55 (216)
- acorn 61 (251)
- agaric 73 (345)
- air (cold) 43
 - (warm) 43
 - (surrounding) 43 (89)
- alkekenji 45 (110)
- almonds 25, 47 (20); see also oil of almonds
- aloe 55 (211)
- aloeswood 41 (83)
- animals 73, 75, 77
 - (born in the stomach and intestines) 77
- anointment 7, 25, 31, 67
- Armenian bole 55 (217)
- asphodel 45, 65 (115)

- balance (state of) 79 (389)
- balsam; see oil of balsam
- barley 23, 81 (12, 398); see also grain of barley
- bath 33 (61)
 - (warm) 77
- bdellium 77 (372)
- bees; see hornets
- beet 61 (246)
- birth wort 71, 73
- biscuits 23 (23)
- bite; see sting
- bitter vetch 73 (346)
- bitumen 69, 71 (228, 316)
- black caraway 67 (305)
- black cumin 65 (284)
 - (wild) 65 (291)
- black nightshade 55 (218)
- bleeding 71
- blood 29, 39, 69; see also sea turtle
- borax 45, 47 (120)
- boys 37, 81
- brain (origin of all bodily movements) 27
 - (superfluous phlegm oozing from the) 49
- bran 25 (27)
- bread crumbs 69
- bugs 65, 75, 77 (289)
- butter 51, 53 (176)

- cadmia 53 (192)
- camomile 43, 65, 81 (100)
- camphor 41, 55 (84)
- caper plant 79 (377)
- caraway 25 (35)
- cardamon 71 (322)
- castor 65, 71 (98)
- catarrh 49, 51
- cat thyme 67 (300)
- celery 61 (248)
- change in weather 9
 - (rheum, defluations and cough caused by) 21, 47
 - (eye diseases caused by) 53
- channels (cartilaginous) 49
- chaste tree 65, 71 (277)
- cheese 77 (362)
- chicken 25, 69; see also meat of chicken
- chickpeas 59, 61 (243)
- cinnamon 25 (37)
- climate and food (causing the *dracunculus medinensis* in the flesh) 77
- clove 41 (79)
- cockroaches 75
- collyrium 9, 53, 55, 79 (187)
- colocynth 65 (274)
- confection 77
- contraria contrariis* 8, 103
- convalescence 37 (64)
- copper (burned) 55 (206)
- coriander 45 (111)
- corruption in the stomach (balanced humours which do not change into) 25
- costus 31 (49)
- cotton wool (a wad of) 41
- cough 7, 21, 41, 47, 49
 - (bad) 49
 - (dry) 49
 - (heavy) 51
- crystalline sugar 49 (154)
- cucumber 63, 71 (263, 270)
- cumin 41, 65 (78)
- cupping glass 69
- cypress 65 (283)

- dandelion 79 (383)
- dates 77

- decoction 79 (378)
 defluctions 7, 21, 41, 47, 49, 51 (150)
 dietetics 85, 86
 dill 61, 79 (249)
 dittany of Crete 67 (301)
 doctor 17
dracunculus medinensis 6, 11, 12, 19, 21, 73, 77, 81 (349)
 dressing (*athena*) 9, 51 (159)
 (*barbaros*) 9, 51 (158)
 (*hikesios*) 9, 51 (160)
 dressings 9, 51, 71, 81 (157)
 drink 7
 drops 45 (117)
 drug 17, 39, 41, 47, 51
 dryness of mouth and uvula (causing thirst) 61
 dust 9, 21, 39, 53 (66)
- earache 7–9, 21, 41, 43, 45, 47
 earthworms 45 (112)
 egg 45
 (poached) 27 (39)
 (white of an) 45 (107)
 electuary 77 (364)
 embrocation 31
 endive 61 (250)
 euphorbium 43 (97)
 excrements 23
 exercise (beware of bodily exercise after a meal) 33
 exercises (excessive physical) 37
 eye (liniment for diseases and severe pains of the) 55
 eye ache 8, 41
 (sharp, burning) 55
 eye diseases 21, 53 (183)
- false bdellium 65 (282)
 fatigue 7, 19, 21, 25, 27, 29, 31, 33, 37 (40)
 feet 39
 fennel 61, 79 (244)
 fenugreek 81 (400)
 feverfew 43 (96)
 figs 51, 53, 81 (178)
 fig leaves (ashes of) 69 (310)
 fire (vermin flee the light of the) 65
 (vermin coming down because of the) 67
 (light a strong fire where one fears vermin) 65
 flea wort 63 (269)
 fleas 75, 77
- foment 81 (395)
 fomentation of the ear 45 (105)
 food 7, 25, 33, 35, 61, 77; see also regimen and climate
 francolins; see meat
 frankincense 47, 55 (137)
 fruit (cold, moist) 63
 (moist) 63
 (syrup prepared from fruit) 73
 fumigants 11, 49, 65 (152)
- galangale 25 (36)
 galbanum 67 (304)
 gall of a lamb 47 (123)
 garlic 65 (276)
 garum 69 (314)
 German iris 73 (341)
 gillyflower; see oil of gillyflower
 ginger 73 (342)
 gnats 65, 75
 gold 77 (371)
 gourd 61 (245)
 grain of barley 23
 grapes (inspissated) 51 (173)
 gum Arabic 53, 55 (190)
 gum tragacanth 63 (266)
- haematite 55 (202)
hājī 6
 hardness of hearing 47
 harmel 45, 65 (103)
 head (heavyness in the) 43
 (is not heavy) 43
 headed thyme 65 (296)
 heat (vapours caused by extraordinary, unnatural heat) 35
 heat and moisture (putrefaction caused by the combination of) 75
 (quantities of heat and moisture from which worms in the belly originate) 75
 hemorrhoids 19
 henbane 51, 55 (170)
 hoarseness 49
 honey 45, 47, 51, 53 (119)
 hoof of a goat 65 (280)
 horn of a stag 65 (279)
 horned poppy 55 (212)
 hornets and bees (a prophylaxis against) 67
 humour (viscous) 45, 47
 humours (bad) 25
 (bad, hot) 33

- (balanced) 25 (31)
- (boiling of the) 79 (388)
- (dissolved by the movement) 29
- (fine and thin) 29
- (sharp) 27
- (sharp, hot) 43
- (superfluous) 49
- (thin) 29
- (viscous, coarse) 29
- (warm) 29
- hygiene; see dietetics
- hyssop 51, 53 (177)
- incision 69
- Indian tutti 55 (198)
- infection (407)
- intestines 23, 37, 39, 77
- ishrās* 45 (116)
- ivory 67
- jasmine; see oil of jasmine
- jerboas 75
- journey (the regimen during journeys in general and the needs of the body during this journey in particular) 19
 - (journeys in general) 19
 - (the journey itself) 21, 23
 - (must take place in those times of the day) 23
- juice 59 (238)
- laurel 45, 81 (167); see also oil of laurel
- laurel nut 51, 71
- lead (piece of) 81
- leek 47, 69, 71 (126)
- lettuce 63 (261)
- licorice root 63 (262)
- lily 51, 53 (180); see also oil of lily
- liniment 9, 55 (209)
- lizards 75
- lizard orchis 71 (333)
- lohoch 53
- long-lived 37
- lycium 55 (213)
- mace 41 (80)
- magnetstone 65 (281)
- mallow; see oil of mallow
- marcasite 55 (203)
- massage 7, 21, 31, 33, 35, 37, 39 (62)
- masseur 31
- mastix 51 (164)
- materia medica* 3
- meal 23 (11)
 - (of wheat, barley or vetches) 59
- meat (of chickens and francolins) 7, 25 (33)
 - (of one year old kids and lambs) 7, 25 (32)
 - (roasted or parboiled) 25 (23)
- Medina worm; see *dracunculus medinensis*
- melilot 45 (101)
- memeceylon tinctorium 41 (82)
- milk 33, 77 (361)
 - (breast milk) 47 (131)
- minerals 10
- mosquitoes 65
- mountain mint 69, 79 (318)
- mountain origan 47 (129)
- mountain parsley 51 (165)
- movement (of the journey) 25
 - (during a long journey) 27
 - (excessive) 27, 43
 - (quick) 27
 - (makes the humours thin) 29
- movements (intensive) 61
- muscles (suffer damage through the friction and collision caused by quick movement) 27
 - (to apply massage hardens the) 39
- musk 55 (208)
- myrobalan (chebulic) 77, 79 (366)
 - (emblic) 77 (367)
 - (yellow) 77 (365)
- myrrh 47, 51, 55 (139)
- myrtle; see oil of myrtle
- Nabataean carob 71 (324)
- naḏūḥ* 25 (28)
- nard; see oil of nard
- natron 47 (122)
- nenuphar; see oil of nenuphar
- nerves (all bodily movements are caused by muscles and nerves) 27
- nigella 41 (77)
- odiferous reed 31 (53)
- odorants 51
- oil of almonds 45, 47 (114)
- oil of balsam 43 (99)
- oil of gillyflower 31, 33 (46)
- oil of jasmine 41 (74)
- oil of laurel 43 (95)
- oil of lily 31, 41 (47)
- oil of mallow 67 (306)
- oil of myrtle 25, 31 (26)
- oil of nard 41, 43 (75)
- oil of nenuphar 33 (60)

- oil of roses 25, 33, 41, 45, 47, 63 (25)
oil of violets 33, 41 (59)
oils 25, 63 67 (24)
 (balanced in temperament) 25
 (balanced in heat) 31
old men 37
olive oil 31, 43, 45
onion 47, 69 (127)
ophthalmia 53 (186)
opium 47, 55 (136)
organs 37
organ 69 (319)
oxymel 23, 47, 77 (19)
- pain (felt in the limbs) 29
 (feeling of) 33
 (attended with tension in the ear) 43
 (deep inside the ear) 43
papyrus (burned) 49 (153)
pastilles 47, 63, 73 (141)
peaches 23 (16)
pearls 55 (195)
pepper 25 (34)
peppermint 79 (387)
phlegm 49
pigeons 69
pilgrim 1, 7, 9, 11
pilgrimage to Mecca 6, 19
pills 77 (369)
pine 51, 53
pine nut 51 (171)
plague (of flies mosquitoes and bugs in Jiddah) 11
plasters 81 (403)
poison 69, 71
pores of the body 79
powder 79 (373)
prophylaxis (against vermin) 6, 11, 19, 23, 65 (272)
 (against snakes) 6, 19
 (against hornets and bees) 67
 (against occurrence of *dracunculus medinensis*) 19, 23, 73
 (against thirst) 86
prunes 23 (17)
purulent matter (flowing from the ear) 47
putrefaction 35, 73, 75, 79 (353)
- quince 63 (271)
rats 75
- red arsenic 51 (166)
regimen 1, 19, 21, 23, 27, 79
 (of the traveller) 7
 (of the body) 19, 43
 (in regard to travelling, food, rest and sexual intercourse) 23
reptiles 75 (357)
residue (hot, vaporous) 39
 (thick, viscous) 49
 (thick) 51
rest 7, 35, 85
rheum 7, 21, 41, 47, 49 (149)
river crab 71 (337)
rose; 41 (86); see also oil of roses
rose-water 25
rose-water syrup 23 (18)
rubbing (of the footsole) 21
 (of the feet) 35
 (extremely hard) 35
 (hard) 35, 37, 39
rue 43, 73 (93)
- saffron 41, 55 (81)
sagapenum 65, 73 (286)
salt 69 (313)
saltiness 63
salty things (thirst which results from eating) 61
salves 11, 31
sandalwood 41 (85)
scorpions 73, 75, 77
seashells 45 (113)
 (burned) 55 (194)
sea turtle (blood of a) 71 (142)
seawater 69 (320)
secacul 77 (368)
sesame 61 (254)
sex res non naturales 85
sexual intercourse 7, 19, 21, 23, 25 (21)
shabyār 77 (370)
silk (piece of) 55
skin 35, 81
sleeping 19, 21, 23
sleeping quarters 11
snakes 6, 19, 73, 75; see also prophylaxis
snuff odorants 49
soil (different kinds of) 75
 (ashy) 75
 (black) 75
 (fertile) 75
 (red) 75
sorb 71 (327)

- southernwood 67 (299)
 spices (fragrant) 25
 (hot) 25
 (fragrant, softening and dissolving) 31
 (hot, dry) 41
 (fragrant, hot) 49
 (with a strong aroma) 71
 spontaneous generation 11, 73 (350)
 starch; see wheat
 stibnite 53, 55 (119)
 sting 11, 23, 67, 69, 73 (307)
 stomach 25, 37, 39, 77
 (free of food) 23
 (food in the) 35
 (full of food) 39
 storax 51 (162)
 (solid) 31 (50)
 (fluid, fragrant) 31 (51)
 (namely, storax of the monks) 51 (163)
 sugar 23, 25, 79
 sulfur (ashes of) 69 (309)
 sumac 71 (326)
 sweet chestnut 61 (252)
 syrup 23, 51, 73 (15)

 tail of a sheep 69
 tamarisk 81 (405)
 tapeworm 73 (352)
 temperament (cold) 49
 (hot) 49
 temperateness 23
 theriaca magna 71 (338)
 thirst 6, 10, 19, 21, 61, 63, 86 (255)
 thistle 47 (138)
 thyme 51 (174)
 ticks 75
 tree (not to halt nor lie down under a) 67
 trees (wild) 67
 turban 23, 41 (69)
 turpentine tree 61 (253)

 unguis odoratus 31 (52)
 uvula (someone whose uvula has been cut off cannot at all endure thirst) 61

 vapour 35
 vegetables 61, 63, 79
 veins 29
 vermin 11, 19, 21, 23, 65, 67, 69, 71
 vessel (stored in a) 55
 vessels (to close their top where one fears snakes) 67
 (lids of small vessels) 67
 vetches 59
 viands 25 (22)
 vinegar 45, 47, 69 (118)
 violets 45 (102); see also oil of violets

 water 6, 9, 10, 19, 21, 57 (224)
 (lack of) 21
 (cold) 23, 35, 86
 (lukewarm) 25, 33, 73
 (lukewarm or balanced in coldness) 25
 (the heat of which is balanced) 33
 (lukewarm as milk) 33
 (best) 10, 21 57 (225)
 (of sulfur) 57
 (of borax) 57
 (of bitumen) 57
 (of natron) 57
 (rainwater) 57 (233)
 (good) 57
 (contaminated) 10, 19, 21, 59, 61 (236)
 (sweet) 59
 (astringent of taste) 59
 (thick) 59
 (salt) 69
 water mint 65, 79 (297)
 wax 67
 weather 23 (146); see also change in weather
 wheat 81
 (starch of) 53, 55 (188)
 whey 77
 white of an egg; see egg
 white lead 53, 55 (191)
 wild amaranth 61 (247)
 wind 19, 21, 39, 53 (65)
 (extremely warm or cold) 7, 21, 39
 (strong, accompanied by dust) 41
 (warm) 41
 (cold) 41
 (warm or cold) 43
 (blowing from the north) 43
 (southern) 43
 (locked in the ear) 8, 43, 45
 (coarse) 47
 (hot and cold) 49
 wine 47, 59, 61 (237)
 (boiled) 47, 69
 worms 73 (351)
 wormwood 65 (298)

 yellow amber 49, 65 (156)
 yellow vitriol 65 (290)

INDEX OF NAMES

a. Arabic

82, 100, 472	جالينوس	9	ابو الحسن عبيد الله بن يحيى
473, 474	سورانوس	1	حسن بن مخلد
473, 475	لاونيدوس	309, 472	بقراط

b. English

Abū al-Ḥasan ʿUbayd Allāh b. Yaḥyā	Edelstein, L. 85
85	Endress, G. 147
Aetius of Amida 8, 10, 89, 90, 91 e.p.	Fähndrich, H. 2, 5, 100, 118, 157
Alexander of Tralles 8, 10, 98, 101, 102 e.p.	Farley, J. 148
Aristotle 11, 12, 147, 148–149	Fellmann, I.: See al-Qalānīsī
Asaph 117, 120, 125, 126, 131, 150, 155	Freytag, G.W. 86, 88, 104, 124, 132
Badawī, A. 147	Galen 1, 8–10, 27, 79, 85, 86, 88–90 e.p.
Barhoum, N.A. 2, 88	Gabrieli, G. 2, 11
Berendes, I.; 107 see also Diosc.	Gershon b. Solomon of Arles 148, 149
Berendes	Goltz, D. 105, 114, 118, 119, 120, 122, 131, 150
al-Bīrūnī 86–90 e.p.	Grotzfeld, H. 94, 95
Brown, H.V.B. 147	Harris, H.A. 94
Brugman, J. 147	Hartlich, G.: See Galen
al-Buḥārī 157	al-Ḥasan b. Maḥlād 1, 3, 6, 17, 85, 111
Burckhardt, J.L. 146	Haydar, G. 2, 5, 87
Burton, R. 86, 97, 121	Helmreich, G.: See Galen
Bussemaker, U.C. 94, 123	Herodotus 95
Celsus 95, 113, 119, 123	Hinz, W. 108, 109, 117, 119, 141
Conrad, L.J. 157	Hippocrates 1, 7–10, 57, 79, 85, 86, 89 e.p.
Cureton, W. 3	Hirschberg, J. 118
Daiber, H. 2, 3	Ḥubayš 121
ad-Damīrī 147	Ḥunayn Ibn Ishāq 2, 118, 121
Daremberg, C.V. 94, 123	Hyrtl, J. 111
Dietrich, A.: See Diosc. Triumphans	Ibn Abī Uṣaybiʿa 6
Diller, H. 97, 120, 121, 126	Ibn al-Bayṭār 86, 90, 106, 113, 116, 131, 140
Diocles of Carystus 5, 85, 86, 88	Ibn al-Jazzār 6, 85, 99, 111, 118, 146
Diosc. Berendes 86–90 e.p.	Ibn al-Ḥaṭīb 6
Diosc. Triumphans 86–90 e.p.	Ibn al-Mubārak 5
Diosc. Wellmann 86–90 e.p.	Ibn an-Nadīm 2, 5, 147, 148
Dozy, R. 148	Ibn an-Nafīs 147
Drossaart-Lulofs, H.J. 147	Ibn al-Quff 87, 88, 98, 99, 103 e.p.
Dugat, G. 99	

- Ibn Bājja 147
 Ibn Mandawayh 6
 Ibn Māsawayh 125
 Ibn Sīnā 5, 8–10, 85–87, 89, 90 e.p.
 Ibn Ṭāwūs 3, 4
 Ibn Ṭufayl 147
 Ishāq Ibn Hunayn 147
 Issa, A. 133, 150

 al-Jāhiz 147
 Job of Edessa 148
 Jones, W.H.S. 94
 Jüthner, J. 93, 95

 Kaempfer, E. 146
 Kaziminski, A. 132
 al-Kindī 2
 Kircher, H.G.: See Ibn al-Quff
 Klein-Franke, F. 97, 141
 Koch, K.: See Galen
 Kohlberg, E. 4
 de Koning, P. 112
 Kopf, L. 89, 131
 Kraus, P. 131, 147, 149
 Kroner, H. 89, 90, 96, 112, 150
 Kruk, R. 147
 Kühn, C.G.: See Galen

 Lane, E.W. 86, 89, 92, 93, 112, 116, 148
 Leibowitz, J.O. 89
 Leonidas 12, 79, 145, 152
 Levey, M.: See as-Samarqandī
 Levi Ben Gershom 148
 Liddle & Scott 86
 Lindeboom, G.A. 146
 Lippert, J. 118
 Loth, O. 3
 Löw, I. 92, 98, 119

 al-Majūsī 9, 85, 88, 90, 91 e.p.
 Maimonides 86, 87, 89, 90 e.p.
 Marcus, S. 89
 Meyerhof, M. 118
 Muḥammad b. al-Ḥasan b. ʿAlī Naqī
 al-Ḥasanī al-Ḥurāsānī 3
 Muḥammad Shafīʿ al-Kirmānī 3, 83
 Muntner, S. 93, 96
 al-Muʿtamid 85
 al-Mutawakkil 85

 Oparin, A. 146
 Oribasius 5, 10, 11, 85, 86, 88 e.p.

 Pasteur, L. 146
 Patah, A. 10, 11, 97, 117, 121, 130
 Paul of Aegina 1, 5, 8–12, 85, 86, 88 e.p.

 Pelster, M. 2, 4
 Philomenus 127
 Pseudo Thābit Ibn Qurra 2, 5, 8, 85
 Puschmann, Th. 103

 al-Qalānisi 87, 104, 112, 113, 116, 117, 119
 Qusṭā Ibn Lūqā 1, 2 e.p.

 ar-Rāzī 5, 8–12, 85–90 e.p.
 Rieu, C. 3
 Rodemer, W. 146, 148
 Rufus of Ephesus 5, 97, 104, 106, 120, 121, 122, 145
 Ruska, J. 131
 Ruth Harvey, E. 2

 as-Samarqandī 93
 Sancherib 2
 Schipperges, H. 85, 94
 Schmucker, W. 86–90 e.p.
 Seidel, E. 157
 Sezgin, F. 1, 2, 4–6, 94, 110, 117
 Siggel, A. 118, 119, 120, 131, 142
 Solomon ha-Me'ati 121
 Soranus 12, 79, 145, 151, 152
 Sourdell, D. 85
 Steinschneider, M. 141, 151
 Sudhoff, K. 111

 at-Ṭabarī 5, 8–10, 85–89 e.p.
 at-Tauḥīdī 147
 Thābit Ibn Qurra: See Pseudo
 Themistius 147
 Theon 94, 95
 Theophrast 90, 91
 Tritton, A.S. 85

 Ullmann, M. 2, 5, 6, 85–88 e.p.
 Ustāt 147

 Vesalius 111
 Vullers, I.A. 88, 90, 118, 119, 124, 125, 135, 150, 154

 Wasserstein, A. 96, 120, 121
 Wellmann, M. 5; see also Diosc.
 Wellmann
 Wiberg, J. 111
 Wiedemann, E. 132
 Wilcox, J. 2
 Witkam, J.J. 3

 Yaḥyā Ibn al-Biṭrīq 12, 147

 az-Zahrāwī 88, 103
 Zimmermann, F.W. 147

GLOSSARY OF MATERIA MEDICA

Preliminary remark: The first number refers to the lines of the Arabic text; the second number between brackets refers to the notes of the commentary.

		اتينا ← ضماد
283, 287 (193)	stibnite	اثمد
56 (16)	peaches	اجاص
		آس ← دهن
104 (50)	solid storax	اسطرك
283, 290 (191)	white lead	اسفيداج الرصاص
214, 375 (115, 116)	root of asphodel	اشراس
251, 257 (50)	solid storax	اصطرك = اسطرك
257 (163)	storax of the monks	اصطرك وهو ميعة الرهبان
460 (364)	electuary	اطريفل
62, 103, 181, 252	spices	افاويه
321 (238)	juices	افشرجات
228, 295, 297 (136)	opium	افيون
295 (216)	acacia	اقاقيا
202 (96)	feverfew	اقحوان
283 (192)	cadmia	اقليميا
204 (101)	melilot	اكليل الملك
461 (367)	emblic myrobalan	املج
		انكاسيوس ← ضماد
460 (365)	yellow myrobalan	اهليلج اصفر
204, 364, 484 (100)	camomille	بابونج
229 (138)	thistle	باداورد
384 (304)	galbanum	بارزد
255, 368, 371 (152)	fumigant	بخور
248, 252, 366 (152)	fumigants	بخورات
		بربار ← ضماد
282, 285, 289 (187)	collyrium	برود
464 (187)	collyria	بوراد
57 (22)	viands	بزماورد
222, 399 (127)	onion	بصل
332 (247)	wild amaranth	بقلة يمانية
332, 335, 349, 358, 460	vegetables	بقول
		بلسان ← دهن

334 (251)	acorn	بلوط
263, 298 (170)	henbane	بنج
364, 369, 375 (277)	chaste tree	بنجنكشت
220, 227 (120)	borax	بنفسج ← دهن
208, 355 (107)	white of an egg	بورق بياض البيض بياض ← بياض
416 (338)	theriaca magna	الترياق الاعظم
287 (198)	Indian tutti	توتيا هندي
268, 269, 398, 484 (178)	fig	تين
268 (178)	figs	تينات
364 (276)	garlic	ثوم
376 (300)	cat thyme	جعدة
56 (17)	rose-water syrup	جلاب
203, 369, 412 (98)	castor	جندبادستر
462 (369)	pill	حب
461 (369)	pills	حبوب
258, 414 (167)	laurel nut	حب الغار
334 (253)	fruit of turpentine-tree	حبة حضرا
265 (174)	thyme	حشاء
294 (213)	lycium	حضض
484 (400)	fenugreek	حلبة
330 (243)	chickpeas	حمص
282, 484 (189)	wheat	حنطة
364 (274)	colocynth	حنظل
399	bread	خبازى ← دهن
209 (112)	earthworms	خبز
351 (261)	black-lettuce	خراطين
220, 229, 400, 402 (118)	vinegar	خس اسود
233 (145)	vinegar prepared from wine	خل
214 (115)	asphodil	خل خمر
359 (270)	cucumber	خنثا
118, 177, 179, 202 (24)	oil	خيار خيرى ← دهن

60, 61, 101, 102 e.p. (24)	oils	ادهان
61, 102 (26)	oil of myrtle	دهن آس
204 (99)	oil of balsam	دهن البلسان
119, 177 (59)	oil of violets	دهن البنفسج
386 (306)	oil of mallow	دهن الخبازا
102, 119 (46)	oil of gillyflower	دهن الخيري
102, 179 (47)	oil of lily	دهن السوسن
202 (95)	oil of laurel	دهن الغار
222 (114)	oil of almonds	دهن لوز
213 (114)	oil of sweet almonds	دهن اللوز الحلو
179, 202 (75)	oil of nard	دهن الناردين
120 (60)	oil of nenuphar	دهن النيلوفر
61, 116, 177, 178, 219, 350 (25)	oil of roses	دهن ورد
179 (74)	oil of jasmine	دهن الياسمين
462 (371)	gold	ذهب
399	tail of a sheep	ذيل الغنم
330, 331, 333, 463, 465 (244)	fennel	رازيانج
410 (326)	sumac	* روس
414, 422 (335)	birth wort	زراوند
258 (166)	red arsenic	زرنج احمر
182 (81)	saffron	زعفران
401 (316)	bitumen	زفت
421 (342)	ginger	زنجبيل
267, 269 (177)	hyssop	زوفا
102, 103, 201, 203, 209 e.p.	olive oil	زيت
212	washed olive oil	زيت مغسول
201, 422, 466 (93)	rue	سذاب
414 (337)	river crabs	السرطين النهرية
368 (283)	cypress	سرو
361 (271)	quince	سفرجل
463 (373)	powder	سفوف
369, 402 (286)	sagapenum	سكبينج
55, 57, 463 (14)	sugar	سكر
250 (154)	crystalline sugar	السكر الطبرزد
56, 232, 460 (19)	oxymel	سكنجين
54 (12)	barley	سلت

411 (329)	sea turtle	السلحفاة البحرية
332 (246)	beet	سلق
335 (254)	sesame	سمسم
267, 271 (176)	butter	سمن
352 (262)	licorice	سوس
269 (180)	lily	سوسن
421 (341)	German iris	السوسن الاسمانجوني
290 (202)	haematite	شاذنج
334 (252)	sweet chestnut	شاهبلوط
333, 465 (249)	dill	شبت
463 (370)	<i>shabyār</i>	شبيار
55, 56, 261, 425 (15)	juice	شراب
484 (398)	barley	شعير
461 (368)	secacul	شقاقل
181, 368 (77)	nigella	شونيز
372 (291)	wild black cumin	شونيز برّي
376 (298)	wormwood	شيح
294 (211)	aloe	صبر
286 (194)	burned sea shell	صدف محرق
211	shells	اصداق
209 (113)	sea shells	اصداق البحر
403 (319)	origan	صعتر
375 (296)	headed thyme	صعتر برّي
224 (129)	mountain origan	صعتر جبلي
282, 291 (190)	gum Arabic	صمغ
263, 268, 269 (171)	pine nut	صنوبر
253, 254, 483 (157)	dressing	ضماد
254 (159)	<i>athena</i>	الضماد الذي يقال له اتينا
253 (158)	<i>barbaros</i>	الضماد الذي يقال له بربار
254 (160)	<i>hikesios</i>	الضماد الذي يقال له انكاسيوس
483	dressings	اضمدة
465 (383)	dandelion	*طرخشقون
485 (405)	tamarisk	طرفاء
294, 296 (209)	liniment	طلاء
295 (217)	Armenian bole	طين ارمني
104 (52)	unguis odoratus	اظفار الطيب

367 (280)	hoofs of a goat	اظلاف المعزى
384	ivory	عاج
220, 221, 223, 224 e.p. (119)	honey	عسل
264 (173)	inspissated grapes	عقيد العنب
296 (218)	black nightshade	عنب الثعلب
182 (83)	aloeswood	عود
		غار
485 (404)	laurel	غار ← حبّ، دهن
422 (345)	agaric	غاريقون
410 (327)	sorb	غبيرا
405	young pigeon	فراخ الحمام
405	chicken	فراريچ
203 (97)	euphorbium	فربيون
		فنجنكشت ← بنجنكشت
349, 358, 359, 425	fruit	فواكه
402, 466 (318)	mountain mint	فودنج جبلي
375, 466 (297)	water mint	فودنج نهري
407 (322)	cardamon	فاقلة
352, 354, 355, 413 (263)	cucumber	فتّا
230, 231, 232, 356 (141)	pastille	قرص
230, 353, 356, 424 (141)	pastilles	اقراص
298 (153)	paper	قرطاس
249 (153)	papyrus	قراطيس
182 (79)	clove	قرنفل
367 (279)	horn of a stag	قرن الايل
330, 331 (245)	gourd	قرع
104 (49)	costus	قسط
104 (53)	odiferous reed	*قصب الذريرة
220 (117)	drop	قطور
359 (269)	flea wort	قطونا
409 (325)	bitumen	قفر اليهود
372 (290)	yellow vitriol	قلقديس
376 (299)	southernwood	قيسوم
251, 369 (156)	yellow amber	كاربا
183, 287 (84)	camphor	كافور
208 (110)	alkekenji	كاكنج

464 (377)	caper plant	كبر
398 (309)	sulfur	كبريت
354, 355 (266)	gum tragacanth	كثيرا
222, 399, 413 (126)	leek	كراث
57 (23)	roasted meat	کردناج
423 (346)	bitter vetch	كرسنة
333 (248)	celery	كرفس
257 (165)	mountain parsley	كرفس جبلي
209 (111)	coriander	كزبرة
55 (13)	biscuits	كعك
180, 372 (78)	cumin	كمون
384 (305)	black caraway	كمون كرماني
286, 291 (195)	pearls	لؤلؤ
224 (131)	breast milk	لبن امرأة
121	fresh milk	اللبن الحليب
485 (403)	plaster	لزوق
485 (403)	plasters	لزوقات
360	mucilage	لعاب
		لوز ← دهن
		لوز حلو ← دهن
57, 227 (20)	peeled almonds	لوز مقشّر من قشرته
208, 220, 222, 359 (109)	extract	ماء
403 (319)	seawater	ماء البحر
62 (29)	rose-water	ماء ورد
290 (203)	marcasite	مارقشيثا
294 (212)	horned poppy	ماميثا
70	yolk	مخ
229, 263, 294, 297 (139)	myrrh	مرّ
222 (123)	gall of a lamb	مرارة الحمل
400 (314)	garum	مرّي
292 (208)	musk	مسك
376 (301)	dittany of Crete	مشكطرامشير
257 (164)	mastix	مصطكي
368 (281)	magnetstone	مغناتيس
463 (372)	bdellium	مقل
368 (282)	false bdellium	مقل اليهود
400 (313)	salt	ملح
		ميلة الرهبان ← اصطرك

104 (51)	fluid, fragrant storax	مبعة عطرية
323	sweet wine	ناردين ← دهن
324	astringent wine	نبذ حلو
221, 222, 391	boiled wine	نبذ قابض
233, 321, 322 (237)	wines	نبذ مطبوخ
291 (206)	copper	انبذة
62 (27)	bran	نحاس
282, 286 (188)	starch of wheat	نخالة
62 (28)	<i>naḍūh</i>	نشاستج
221 (122)	natron	نضوح
466 (387)	peppermint	نطرون
70 (39)	poached egg	نعنع
461 (366)	chebulic myrobalan	نيلوفر ← دهن
333 (250)	endive	نمبرشت
182 (82)	memeceylon tinctorium	هللج
409 (324)	Nabataean carob	هندباء
		ورد ← دهن
		ورس
		ياسمين ← دهن
		ينبوت

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