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***Kitāb al-Mā'*: an Arabic medical dictionary of the mid-fifth Islamic century**

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Abstract: In 1996, Hādī Ḥasan Ḥammūdī published an edition of a medical dictionary based on two manuscripts he had found in a private collection in Oran, Algeria. The dictionary was allegedly written by 'Abū Muḥammad 'Abdallāh b. Muḥammad al-'Azdī, known under the name Ibn al-Dhahabī (d. 456/1064).¹ The author of the dictionary acquired his knowledge in several regions of the Islamic world and allegedly studied with such famous scholars as al-Bīrūnī (d. 440/1048) and Ibn Sīnā (d. 428/1037). Complaining that his contemporaries frequently used non-Arabic terms, he decided to compile a dictionary, arranging the terms in alphabetical order by their roots, and explaining their medical as well as their linguistic aspects. He entitled his dictionary the Book of Water (*Kitāb al-mā'*), after its first entry, on water (*al-mā'*). This paper investigates the text with regard to its author, content, principles of organisation, authorities, and intertextuality, with the aim of verifying the authorship of Ibn al-Dhahabī and of better understanding the literary environment and the reading culture of the fifth century.

Keywords: history of medicine, medical dictionary, Arabic lexicography, Pseudo-Ibn al-Dhahabī, 'Abū Muḥammad 'Abdallāh b. Muḥammad al-'Azdī, *Kitāb al-mā'*

1 Introduction

The fourth and early fifth Islamic centuries represent the culmination of a process of appropriation in the field of medicine that began in the very earliest period of the adaptation of foreign knowledge under the Abbasid caliphate.² Translations of

¹ The transcription shows *hamzat al-qaṭ'* but not *hamzat al-waṣl*, therefore: 'abū but *ibn*.

² For a general overview on medical literature see Savage-Smith et al. 2012: "Ṭibb" in EI 2nd ed. and Ullmann 1970: ch. 2 and 3. On transfer of knowledge between Arabic and other cultures see Pormann/Savage-Smith 2007: ch. 1 and ch. 6; for Arabic medical literature in the Abbasid period see Isaacs 1990: 342–363.

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Greek medical works, contact with Persian, Indian, and Syriac medical traditions, and new developments in medicine resulted in a vast expansion of medical knowledge. As a result, the need to organise this gigantic body of knowledge became so pressing as to lead to the production of several comprehensive medical encyclopaedias in Arabic.³ Of these, the following four were probably the most influential, because they were translated into Latin and had a huge influence on both the Islamic world and Europe: *Kitāb al-manṣūrī fī l-ṭibb* and *Kitāb al-ḥāwī* by 'Abū Bakr Muḥammad b. Zakariyyā' al-Rāzī (c. 250/854–313/925 or 323/935), *Kitāb kāmīl al-ṣinā'a l-ṭibbiyya* by 'Alī b. al-'Abbās al-Majūsī (d. between 371/982 and 385/995) and *Kitāb al-Qānūn fī l-ṭibb* by Ibn Sīnā (370/980–428/1037).⁴

These medical encyclopaedias were arranged according to a logical system that reached its peak with *al-Qānūn fī l-ṭibb*.⁵ The theoretical sections deal with natural philosophy, general principles of therapy, anatomy, and dietetics, while the practical parts are subdivided between pathology and pharmacology. The pathological sections are divided into sections dealing with organ-specific and non-organ-specific maladies, with organ-specific maladies arranged according to the principle “head to heel.” The pharmacological sections are divided into sections on simple drugs (arranged alphabetically by initial letter in the order of “abjad hawwaz”) and sections on composed remedies (arranged according to dosage forms as well as the maladies to which they are to be applied). Although this system is quite logical, it presupposes medical knowledge, and is therefore only practically accessible to physicians or medical students.

In the fourth and early fifth Islamic centuries, other sophisticated systems for classifying knowledge were also present.⁶ If we consider the development of lexicographical tradition, two types of lexical writings can be differentiated: the onomasiological and the semasiological or, the *mubawwab* and the *mujannas*.⁷

The onomasiological lexica comprise the vocabulary of a specific topic, arranged alphabetically or, alternatively, logically. Some specialise in specific linguistic phenomena, such as strange (*gharīb*) or rare (*nādir*) usages in the

³ See Isaacs 1990: 354–358.

⁴ See Ullmann 1970: 132, 130–131, 140–146, 152–155 resp.

⁵ See Ullmann 1970: 152–154.

⁶ The most extensive works on Arabic Lexicology are Naṣṣār 1988: *Al-Mu'jam al-'arabī*, which was originally written as a PhD thesis in 1953 and first published in 1956; Haywood 1960: *Arabic Lexicography*; Dévényi, K. et al. (eds.) 1993–1994: *Proceedings of the Colloquium on Arabic Lexicology and Lexicography*; Baalbaki 2014: *The Arabic Lexicographical Tradition*; Sezgin 1982: *Geschichte des arabischen Schrifttums*, vol. VIII, *Lexikographie.*; Endress 2006: *Organizing Knowledge: Encyclopaedic Activities in the Pre-Eighteenth Century Islamic World*.

⁷ Baalbaki 2014: VII–X. For an overview of Arabic lexicography in the Abbasid period see Carter 1990: 106–117; on Arabic lexicography in the fourteenth century see Muhanna 2013: 343–356.

Qur'ān or hadith, proverbs ('*amthāl*), use of solecism (*lahn al-'amma*), homonyms (*mushtarak*), synonyms (*mutarādif*), words with two contradictory meanings ('*aḍḍād*), derivation (*ishtiḳāq*), or arabised words (*mu'arrab*). Others are devoted to the vocabulary of a semantic field, such as plants (*nabāt*), animals (*ḥayawān*), the human body (*khalq al-'insān*), or weather phenomena such as rain (*maṭar*), thunder (*ra'd*), or wind (*rīḥ*).⁸

The semasiological lexica, on the other hand, are arranged according to formal principles listing all roots or lexical items of the language.⁹ Three bases for organisation are differentiated: the phonetic-permutative, the alphabetical, and a system based on rhyme. The phonetic-permutative system arranges the roots of the lexical items according to their place of articulation, as in *Kitāb al-'ayn* by al-Khalīl b. 'Aḥmad (d. 175/791), the first *mujannas* lexicon in Arabic.¹⁰ The alphabetical system arranges the roots or lexical items according to the first letter in the order – '*alif*, *bā*', *tā*', *thā*', *jīm*, and so on – as in *Kitāb al-jīm* by 'Abū 'Amr al-Shaybānī (d. 206/821), the oldest lexicon with this alphabetical arrangement.¹¹ The rhyme system also organises the roots alphabetically but by the last radical, followed by the first, then for trilateral roots the second radical, and finally for quadrilateral roots, the third radical. Lexica of this genre were compiled in a later period. The first rhyme dictionary was *Tāj al-luḡa wa-ṣiḥāḥ al-'arabiyya* (The crown of language and the correct Arabic) by al-Jawharī (d. c.400/1000).¹²

In the fourth and fifth centuries, several medical texts organised alphabetically are known to us. In his *Die Medizin im Islam*, Ullmann surveys glossaries and appendices of extensive texts¹³ in addition to books of simple drugs and chapters dealing with pharmacognosy,¹⁴ as well as the *Kitāb minhāj al-bayān fī mā yasta'miluhū l-'insān* (Explanation of things applied by human beings) by Ibn Jazla (d. 495/1100), which deals in alphabetical order with simple drugs, as well as composed remedies and foodstuffs.¹⁵ To my knowledge, no study has yet explored the classification systems of these works, nor has lexicographical

⁸ Baalbaki 2014: VII-X, 132–161.

⁹ Baalbaki 2014: VIII-X, 279–402.

¹⁰ Baalbaki 2014: 280. See also *Kitāb al-'ayn* in the edition by Mahdī al-Makẖzūmī and 'Ibrāhīm al-Sāmarrā'ī (al-Farāhīdī 1988) and the study of Stefan Wild on it (Wild 1965).

¹¹ Baalbaki 2014: 329–333. See also *Kitāb al-jīm* in the edition by 'Ibrāhīm al-'Ibyārī (Al-Shaybānī 1974–1975).

¹² Baalbaki 2014: 363. See also *Tāj al-luḡa wa-ṣiḥāḥ al-'arabiyya* in the edition by Aḥmad 'Abd al-Ghafūr 'Aṭṭār (al-Jawharī 1990).

¹³ See Ullmann 1970: 235–238, 288–292.

¹⁴ See Ullmann 1970: 257–288.

¹⁵ See Ullmann 1970: 274.

research investigated the extent to which the organisational systems of onomasiological or semasiological lexicography were adapted by authors to organise the body of medical knowledge. Research in the field of medical history, on the other hand, has paid little attention to the linguistic aspects of medical texts. A further question to be raised is whether medicine and Arabic philology remained two separate disciplines, or whether any mingling of forms took place.¹⁶

In 1996, an edition of a hitherto unknown medical Arabic dictionary was published by the ministry of culture in the sultanate of Oman.¹⁷ The editor, Hādī Ḥasan Ḥammūdī, by chance found two manuscripts of this lexicon in Algeria. He attributed it to 'Abū Muḥammad 'Abdallāh b. Muḥammad al-'Azdī, a physician who was born in Ṣuḥār in Oman and died in Valencia in 456/1064. This text is an extremely interesting object for investigation because it represents a new classification system that combines medical with philological knowledge. The present paper analyses that text with regard to author, content, organisational principles, authorities, and intertextuality, with the aim of answering the following questions. Does the lexicon represent an attempt at the conservation of knowledge, or is it a completely new development? What does the text tell us about the literary environment and reading culture of the fifth century? What does the text tell us about the compiler of the lexicon? Is Ibn al-Dhahabī or 'Abū Muḥammad 'Abdallāh b. Muḥammad al-'Azdī the author of the text, as Ḥammūdī suggested?

2 The author of *Kitāb al-mā'*

The editor of *Kitāb al-mā'* attributed the medical lexicon to 'Abū Muḥammad al-'Azdī, known as Ibn al-Dhahabī.¹⁸ Unfortunately, the author of the work is never explicitly named, whether in the preface, the colophon, or anywhere in the entire edited text. In order to verify Ḥammūdī's thesis concerning the authorship of the text, I have examined the paragraphs in *Kitāb al-mā'* that contain bio-bibliographical information about the author and compared them with the data given by Ibn 'Abī 'Uṣaybi'a (d. 668/1270) about Ibn al-Dhahabī in his bio-bibliography of physicians.

¹⁶ Philology and botany are represented equally in *Kitāb al-nabāt* by 'Abū Ḥanīfā al-Dīnawarī (d. 282/895). It comprises information on plants and animals, as well as linguistic details taken from previous philologists or collected by the author himself (See Bauer 1988: 61–64; Ḥamidullāh 1973: 22–27, 52–56; Lewin 1953: 1–16; Silberberg 1910: 33–35).

¹⁷ Al-Ṣuḥārī, 'Abū Muḥammad 'Abdallāh b. Muḥammad al-'Azdī (1996): *Kitāb al-mā'*: 'awwal mu'jam ṭibbī lughawī fī l-tārīkh. Edited by Hādī Ḥasan Ḥammūdī. 3 vols. 'Umān: al-Maṭba'a l-Sharqiyya. In this article, Ḥammūdī's edition is abbreviated as KM.

¹⁸ KM 1: 10.

3 The author's bio-bibliographical data in *Kitāb al-mā'*

3.1 The author's origin

In the entry on Ṣuḥār, Ḥammūdī refers to a verse, cited in the first person, which allegedly reveals the author's place of origin as being this city in Oman. Otherwise, geographical names are not usually included as lemmata:

diyārun bihā shuddat 'alayya tamā'imī

([Ṣuḥār is] a land in which my amulets were bent [around my neck as I was born])

wa-'awwalu 'arḍin massa jildī turābahā

(and the first land whose soil my skin felt).¹⁹

This verse was certainly not composed by the author of *Kitāb al-mā'*, since it is a variation of an old anonymous verse cited in several sources, such as Ibn Ṭayfūr's (d. 893) *Balāghāt al-nisā'* (Clever remarks of women) by an anonymous woman. When she was asked about her most beloved land (*'ayy al-bilād 'aḥabb 'ilayki*), she answered:

diyārun bihā ḥalla l-shiyābu tamā'imī

([Ṣuḥār is] a Land in which my amulets my gray hair touched)

wa-'awwalu 'arḍin massa jildī turābahā

(and the first land whose soil my skin felt).²⁰

This verse demonstrates affection for one's native land, i. e. the place of birth and youth, and was cited in several later works.²¹ The author of *Kitāb al-mā'* adopted this verse and cited it in the entry on Ṣuḥār. Therefore, Ḥammūdī concluded that the author of *Kitāb al-mā'* must have belonged to the branch of the 'Azd tribe, which inhabited the region of Ṣuḥār.²²

¹⁹ KM 1: 12, 388.

²⁰ Ibn Ṭayfūr 1908: 199. I owe this reference to one of the anonymous reviewers.

²¹ See for example 'Usāma b. Munqidh 1968: 268–269. We find another variation of the first half-line of verse by 'Usāma b. Munqidh. The verb used is *nīṭa* with the same meaning as the verb *shudda* that was used in *Kitāb al-mā'*: ([Ṣuḥār is] a land in which my amulets were bent [around my neck as I was born]). The editor of *al-Manāzil wa-l-diyār* Muṣṭafā Ḥijāzī mentions further works citing this verse and their alleged authors.

²² See KM 1: 12. On the tribe 'Azd see Strenziok 2012: EI 2nd ed.

However, the text of *Kitāb al-mā'* includes no information about the childhood of the author, or whether his family resided in Şuḥār or migrated to Başra or Khurāsān.

3.2 The author as student

The author studied with renowned scholars such as Ibn Sīnā, al-Bīrūnī, and al-Tha'ālibī. He was especially influenced by Ibn Sīnā, to whom he owed great respect, referring to him regularly in his *Kitāb al-mā'* as “our very erudite master” (*shaykhunā l-'allāma*).²³ He also acknowledges Ibn Sīnā's profound influence on his lexicon in the preface of his work:

I relied in this book on my own experience and on the knowledge that the great master physicians gave to me in abundance. The first of them to be mentioned is the very erudite master Ibn Sīnā. I am indebted to him for every word written here and from him we have taken what we have addressed in every science. From him, I have taken most of my chapters on medicine.²⁴

However, no details are given by the author about his apprenticeship with Ibn Sīnā. What then makes us certain that the author really did study with Ibn Sīnā, rather than just reading his works and describing him figuratively as his master? The reason is that the author occasionally cites Ibn Sīnā using verbs that indicate direct contact. He uses, for example, the expression “I have heard the master saying” (*sami'tu l-shaykh yaqūl*), citing Ibn Sīnā on the correct pronunciation of a Byzantine Greek name for a plant: “The deadly carrot (*diryās*) is called *thāfbiyā* [...], and some say *thāfsiyā*'. The first is more correct; we heard it from our very erudite master and it is a Byzantine Greek name (*ism rūmī*).”²⁵ Describing the potency of chicory (*hindibā'*), the author writes something he has heard Ibn Sīnā say: “I have heard our very erudite master saying that its essence [of chicory] is composed of a cold, earthy, watery substance which is abundant

²³ See for example KM 1:159, 2:89.

²⁴ KM 1: 31. A comparison of samples from *Kitāb al-mā'* with corresponding texts in *al-Qānūn fī l-ṭibb* reveals the significant adaptation. (For more details see the section “Cited authorities and intertextuality”).

²⁵ KM 2: 74. This plant has an entry by Ibn Sīnā's *al-Qānūn fī l-ṭibb* under the lemma *tafsiyā*. It is noted that the name could be pronounced as *thāfsiyā* as well. The scientific name of the plant is *Thapsia garganica* L. (See Ibn Sīnā 1987: I, 755–756). The root bark was used internally as a purgative in several diseases mainly against asthma and externally against leprosy and freckles (See Schneider 1968–1975: V/3, 333).

and of a subtle substance which is sparse...²⁶ And explaining the potency of a revitalising drug (*mufarriḥ*), he cites Ibn Sīnā thus: “I have heard the master saying that revitalising drugs act through a known cause or through an occult property (*khāṣṣiyya*).”²⁷ He also uses the verb “narrate” (*ʿakhbara*). The master has told him, for example, that rabies is a kind of madness (*dāʿ al-kalab nawʿ min al-junūn*).²⁸ He quotes verses that were recited (*ʿanshada*) by Ibn Sīnā on the subject of grey hair (*shayb*) (*ʿanshadanā shaykhunā l-ʿallāma yaṣif al-shayb*).²⁹ The construction *ʿanshadanā* indicates that the verses were vocalised by Ibn Sīnā and heard by the author.

The author’s second teacher was ʿAbū l-Rayḥān Muḥammad b. ʿAḥmad al-Bīrūnī (362/973–c. 440/1048), a polymath who wrote on mathematics, astronomy, astrology, chronology, geography, pharmacology, and meteorology.³⁰ The author must have met al-Bīrūnī in Khwārazm or Ghazna, since al-Bīrūnī spent most of his life there.³¹ We infer that the author of *Kitāb al-māʿ* studied pharmacy with al-Bīrūnī because he says in his section on the poultice (*ḍimād*): “I heard al-Bīrūnī saying that poultices are composed remedies of the consistency of electuaries (*maʿājīn*) that are applied externally with a bandage.”³² As al-Bīrūnī developed an interest in pharmacology and mineralogy towards the end of his life,³³ we can conclude that the author of *Kitāb al-māʿ* studied with him during the same period as his study with Ibn Sīnā, al-Bīrūnī’s younger contemporary.

The author of *Kitāb al-māʿ* was interested not only in medicine and pharmacy, but also in Arabic philology, and he may also have studied with al-Thaʿālibī. The famous philologist ʿAbū Maṣʿūr ʿAbd al-Malik b. Muḥammad b. ʿIsmāʿīl al-Thaʿālibī (350–429/961–1038) spent his entire life in the eastern Islamic world in cities like Nīshāpūr, al-Jurjāniyya, Jurjān, and Ghazna.³⁴ Al-Thaʿālibī is famous for his three lexicons: *Fiqh al-lughā wa-sirr al-ʿarabiyya* (Knowledge of the language and secret of Arabic), a work that groups vocabu-

26 KM 3: 460. The same quotation is to be found in Ibn Sīnā’s *al-Ṭabīʿiyyāt*, in the book on plants *fī l-nabāt* (Ibn Sīnā 1975: 36). The scientific name of chicory is *Cichorium endivia* L. and *Cichorium intybis* L. (See Ibn Sīnā 1987: I, 483–484; Schneider 1968–1975: V/1, 291–293).

27 KM 3: 137.

28 KM 3: 270.

29 KM 3: 313.

30 Yano 2013: EI 3rd ed.

31 Yano 2013: EI 3rd ed.

32 KM 2: 441.

33 Yano 2013: EI 3rd ed.

34 Rowson 2012: EI 2nd ed.

lary by semantic field; *al-Tamthīl wa-l-muḥāḍara* (Proverbs and oration), a comprehensive collection of proverbs; and *Thimār al-qulūb fī l-muḍāf wa-l-manṣūb* (The fruits of the heart on genitive and accusative), an alphabetically arranged lexicon of two-word phrases and collocations.³⁵ Interestingly, this prominent scholar of Arabic language and literature is cited in connection with a Greek word, namely melancholy (*mālankhūliyā*): “I have heard al-Tha‘alibī saying (*wa-samī‘tu l-Tha‘alibī yaqūl*) that melancholy is a kind of madness.”³⁶

3.3 The author as traveller

If we assume that all phrases in the first person do refer to the author and are not verbatim quotations, we may deduce that the author travelled in many regions of the Islamic world: in the Arabian peninsula, in Iraq, the Levant, Transoxania, the Maghrib, and al-Andalus. In the Arabian Peninsula, he was in Ṣuḥār in Oman and also visited Mecca, as may be concluded from his comments on the flora of this region. He comments on betel (*tāmūl*, *tābūl* or *tanbūl* in Hindi): “I saw the people in Ṣuḥār and Mecca chewing it with some lime in order to improve its taste and to accelerate its interaction with the spirits.”³⁷ And in another text passage: “the Arabian balsam tree (*bashām*) is a shrub that I saw near Mecca.”³⁸ In Yemen and Oman, the author describes a tree called *tannuwama*:³⁹

35 Rowson 2012: EI 2nd ed.

36 KM 3: 329. Interestingly, the word *mālankhūliyā* has been neglected by Arab philologists and cannot be found in Arabic medieval dictionaries. A search (24. 01. 2017) on the data base of *al-Warraḡ* which includes 19 of the most important Arabic dictionaries yielded one hit of *mālankhūliyā* in a single dictionary, namely in Dozy’s *Supplément aux dictionnaires arabes* (See Dozy 1927: s. v. مالىخوليا).

37 KM 1: 206. The plant is to be found by Ibn Sīnā’s *al-Qānūn fī l-ṭibb* under the name *tanbūl*. Betel leaves are used as a periodontal treatment and a stomachic. Nevertheless, Ibn Sīnā does not mention the mixture with lime (See Ibn Sīnā 1987: I, 755). A mixture with lime and areca nuts was mentioned in European accounts from the nineteenth century (Schneider 1968–1975: V/1, 122). Lime (Calcium hydroxide) reduces the active components i. e. alkaloids to their basic forms that can be better absorbed sublingually (see Evans 2009: 357, 255).

38 KM 1: 131. The term is not mentioned in Ibn Sīnā’s *al-Qānūn fī l-ṭibb* or al-Rāzī’s *al-Ḥāwī*.

39 I have not found the term *tannuwama* in Ibn Sīnā’s *al-Qānūn fī l-ṭibb* or al-Rāzī’s *al-Ḥāwī*. But it is mentioned in *Sharḥ li-Kitāb Diāsqūridūs fī hayūlī al-ṭibb* (The explanation of Dioscurides’ book on materia medica) (see Dietrich 1988: II, 703–705).

Heliotropium (*tannuwama*) is a tree that I saw in the desert of Yemen and Oman. Its leaves are blackish and its berries are like the berries of cannabis (*shahdānj*) or slightly bigger. I saw the Bedouin women grinding the berries and extracting from the berries a viscous, blue oil by squeezing, which they use when combing their hair.⁴⁰

The author has also travelled in the eastern reaches of the Islamic world, for example in Khorāsān, where he allegedly sought knowledge with Ibn Sīnā and al-Bīrūnī.⁴¹ He notes that “[he] often saw vidanga (*barnij*) in Gorgan (Jurjān), a plant that grows abundantly in India (*bilād al-hind*) and Transoxiana (*mā warā' al-nahr*).”⁴²

Several notes and his use of vernacular nomenclature for plants and maladies may point to a period of residence or travel in the Levant, Iraq, and Egypt. He notes for example that a plant grows in Jerusalem (*bayt al-maqdis*) that is similar to *Ptychotis* (*rijl al-ghurāb*)⁴³ but has dark green leaves, yellowish veins and chubby roots and is effective against rheuma (*waja' al-mafāsil*) and gout (*niqrīṣ*).⁴⁴ He notes that watermelon (*biṭṭikh shāmī*) was known in Mecca as *habba*, in Iraq as *raqqī*, in Egypt as *biṭṭikh 'aḥmar*, and in the Maghrib as *dallā*.⁴⁵ In the Levant it is also called *faqqūs*.⁴⁶

The abundant comments on the Maghrib and al-Andalus seem to indicate that the author spent a long time there. He writes on laxatives (*'adwiya mushila*): “We saw that a half dirham of scammony (*saqamūniyā*) would be sufficient to

40 KM 1: 207. Interestingly, a very similar citation is found in al-'Azharī's *Tahdhib al-luḡha*: “I say (*qultu*) Heliotropium is a tree that I saw in the desert. Its leaves are blackish and its berries are like the berries of cannabis (*shahdānj*) or slightly bigger. I saw the Bedouin women grinding the berries and extracting from the berries a viscous, blue oil by squeezing, which they use when combing their hair.” (al-'Azharī 1964–1967: s. v. t-n-m). The citation in *Kitāb al-mā'* includes a specification of the desert, namely the desert of Yemen and Oman. This could mean that the author of *Kitāb al-mā'* added these details based on his own observations or that he used another edition of al-'Azharī's lexicon. This would throw doubt on the authenticity of all quotations in the first person. Nevertheless, I have so far not found any evidence that other quotations were taken from scholars quoted in *Kitāb al-mā'*.

41 See the section “The author as a student”.

42 KM 1: 122. This plant is to be found in *al-Qānūn fī l-ṭibb* under the entry *birank kābulī*, which is recommended as a purgative of phlegm. Its scientific name is *Embelia ribes* Burm. f. (Ibn Sīnā 1987: I, 433). The plant had been in use in Ayurvedic medicine for a long time, as it was recommended already by Sushruta. In the twentieth century, it was still recommended in European pharmacognosy books against tapeworm infections (Schneider 1968–1975: V/2, 52–53).

43 The Latin name of the plant as indicated in the edition of Ibn Sīnā's *al-Qānūn* is *Ptychotis verticillata* Duby (Ibn Sīnā 1987: I, 727).

44 KM 3: 96.

45 KM 1: 229.

46 KM 3: 157.

purge in the East (*al-mashriq*) but the people from al-Andalus would take five dirhams for a purgation. This amount would not even cause an effect in addicted people.”⁴⁷ We are also introduced to local dishes such as *al-kishkiyya*, popular in al-Andalus and in the coastal region of the Maghrib (‘Udwa), made of wheat flour (*daqīq al-ḥinṭa*) and sour milk (*laban ḥāmiḍ*).⁴⁸

3.4 The author as physician

The author must have been a practitioner of medicine who often gives his own medical opinion. Using the phrase “I disapprove of it” (*‘anā lā ‘uḥiqquhū*), he expresses his rejection of some therapeutic methods and concepts. For example, he disapproves of using cauterisation to treat jaundice (*yaraqān*).⁴⁹ He also rejects the opinion that eating the tongue of a parrot (*babbaghā*) brings eloquence (*faṣāḥa*),⁵⁰ as well as the legend that one wing of the roc (*rukḥkh*) is one thousand cubits long.⁵¹ He further criticises the opinion that *ṣaydal* and *ṣaydan* originally meant the stones of silver (*ḥijārat al-fiḍḍa*).⁵²

Pharmacy (*al-ṣaydala*) is defined by him as the practice of selling medications (*‘adwiya*) and fragrances (*‘uṭūr*). He considers pharmacy to be a branch of alchemy (*wa ‘innamā l-ṣaydala ṣan‘a min al-kīmiyā*), because an apothecary need not be familiar with the therapies of maladies, but must know the effects (*quwwa*) of simple drugs and composed remedies, their dosage (*miqdār mā yushrab minhā*), the vehicles that mitigate their damage (*mā yuḍāf ‘ilayhā li-yadfa‘ ḍararahā*), and the like.⁵³ This remark seems to indicate a separation of the professions of medicine and pharmacy. The physician is specialised in therapy and the pharmacist in drug preparation. Interestingly, the term *dawā’ ṣanī’* means a medicament that is prepared with utmost attention by a physician.⁵⁴

47 KM 1: 371. Ibn Sīnā does not mention the addictive effects of scammony in his *al-Qānūn fī l-ṭibb*. See the entry on *saqamūniyā* (*Convolvulus scammonia* L.) in the second book on simple drugs (Ibn Sīnā 1987: I, 639–641).

48 KM 3: 266. See Dozy 1927: s. v. كشكية.

49 KM 1: 56.

50 KM 1: 100.

51 KM 2: 144.

52 KM 2: 393.

53 KM 2: 393.

54 KM 2: 418. The emergence of professional pharmacy in Islam dates back to the eighth century as privately owned pharmacy shops (*dakākin al-ṣayādila*) are mentioned during the reign of the caliph al-Mahdī (reg. 775–785). As Hamarneh supposes, “the separation of Pharmacy from medicine in Islam [...] was not the result of legislative action enforced by the central government. Rather it was the outcome of a need for specialization in view of expanding

The author explains his opinion on particular theoretical debates and therapeutic principles. One of these is the debate on the temperament of rhubarb (*rāwand*) – whether it is cold or hot – which is relevant to its application as an antidiarrheal or purgative.⁵⁵ On the one hand, Ibn Sīnā considers rhubarb to be a cold drug and therefore recommends it against diarrhoea.⁵⁶ On the other hand, the physicians of the period (*'aṭibbā' zamāninā*) applied the drug as a purgative (*li-yushil*), and the author's own practice shows that rhubarb is hot (*wa-lladhī dallatnā 'alayhi l-tajriba 'annahū ḥārr*). He explains this discrepancy by saying that rhubarb has complex effects (*murakkab al-quwā*), which include an astringent (*quwwa qābiḍa*) as well as an aperient effect (*quwwa mushila*). Applied alone, rhubarb acts as a strong laxative, but when combined with other astringents, it acts as a strong antidiarrheal. Finally, the author sharply contradicts the opinion that the rhubarb of his day has a distinctive nature thanks to the changing cosmic constellations (*qad taghayyarat ṭabī'atuhū bi-taghyr al-'aḥwāl al-falakiyya*), and describes those who advocate this opinion as meddlers in the art of medicine (*fa-dhālika min 'awhām al-dukkhalā' 'alā l-ṣan'a*).⁵⁷

The author rejects the opinion of his predecessors (*al-mutaqaddimūn*) on the question of menstrual blood. He writes: "I have read in the books of previous physicians something that cannot be comprehended" (*qara'tu fī kutub al-'aṭibbā' al-mutaqaddimīn mā lā 'arifu lahū wajh*).⁵⁸ It is about the cessation of menstruation after conception. It is postulated that one-third of menstrual blood is used for the nutrition of the embryo, another for the formation of milk, and the last is a waste (*faḍl*) that is preserved in the body until the childbed period, during which it leaves the body. The author rejects the concept that the embryo is

trade and knowledge of drugs and the skills required for compounding the various pharmaceutical preparations." (Hamarneh 1962: 60, 63).

55 KM 2: 186.

56 KM 2: 186. See Ibn Sīnā 1987: I, 723–724.

57 KM 2: 186–189. Ibn Sīnā mentions rhubarb in *al-Qānūn fī l-ṭibb* as a simple drug under *rāwand* and recommends it against indigestion, dysentery, stomach pain (Ibn Sīnā 1987: I, 723–724). The difference in the discussed effects of rhubarb might be due to different species of the plant. Ibn al-Bayṭār already mentions four species (see Ibn al-Bayṭār 1874: I, 129; Schneider 1968–1975: V/3,165–170). The active agents of rheum are anthraquinones that have a purgative effect. Nevertheless, "anthraquinones owe their activity to complex mixtures of 1,8-dihydroxy derivatives of anthranols, their glycosides and free anthraquinones. The relative proportions of the constituents of the mixture, which greatly influence the pharmacological activity, depend not only on time of collection, age of plant, drying conditions and geographical source, but also on genetical factors." (Evans 2009: 107–108). Rhubarb is used today as a bitter stomachic and in the treatment of diarrhoea, purgation being followed by an astringent effect. The drug is suitable as an occasional aperient but not for the treatment of chronic constipation (Evans 2009: 244–246).

58 KM 2: 470–471.

nourished by menstrual blood, which he considers bad waste (*faḍla radī'a*), and he asserts that the embryo is nourished by the mother's good blood (*'amma ghidhā' al-janīn fa-ya'tihī min 'afḍal dam fī badan al-'unthā*).⁵⁹

Regarding the efficacy and nomenclature of drugs, the author expresses views that differ from those of his contemporaries. He writes that it is common knowledge that melilot is called “king's crown” (*'iklīl al-malik*) because it is used to make crowns worn on the heads of kings. He thinks, however, that this is because the plant is used against headache.⁶⁰ He criticises the ignorance of the contemporary physicians who prescribe the stem of common peony (*'ūd al-fāwāniyā*) to young boys to be worn round their neck against epilepsy even though the drug has no effect. Consulting the books of Dioscurides and Galen, he finds that they recommended only the roots and seeds, not the stem of peony.⁶¹

The overall impression is of a critical stance towards certain opinions current among his contemporaries, a stance based on logical consideration and on his own experience. Nevertheless, his criticism does not extend to religious tradition. This is obvious in his comments concerning the lifespan of human beings:⁶²

The end of life must not be limited to a specific age. Therefore, the widespread belief among common people that the natural age of human beings is 120 years is unreasonable (*lā 'aṣla lahū*). A human being may live thousands of years and we cannot deny what was written in the histories about the longevity of some people such as the kinsfolk of our Lord Jonah, peace be upon him, and [what was written] in the holy scriptures about the longevity of our Lord Noah, peace and blessings be upon him. [The age] can only be understood literally as it is indicated. That is all possible. But if we consider the lifespan of the people of our time we see that most live to be between 60 and 70 and that the age of a human being may only exceed 100 years in very rare cases. What is said about some Chinese and Indians who live longer and many of them even exceed 200 years is not correct.⁶³

⁵⁹ KM 2: 471. Ursula Weisser does not mention any contradictory argumentations to the Greek doctrine of alimentation the embryo by menstruation blood during gravidity and lactation in her thesis on concepts of reproduction in Arabic medical literature in the middle ages until the tenth century i. e. ending with Ibn Sina's works (see Weisser 1983: 252–254, 258).

⁶⁰ KM 3: 273. Melilot (*'iklīl al-malik* the scientific name is *Melilotus officinalis* L.) is mentioned by Ibn Sīnā who does not discuss the origin of the nomenclature but recommend it against headache (Ibn Sīnā 1987: I, 376–377).

⁶¹ KM 2: 411. Ibn Sīnā mentions the antiepileptic effect of common poeny (*fāwāniyā*, *Paeonia officinalis* L.) even if it was worn round the neck. He uses the seeds and roots of the drug (Ibn Sina 1987: I, 686–687). The antiepileptic effect of seeds and roots if worn round the neck were also described in herbaria of the sixteenth century in Europe (see Schneider 1968–1975: V/3, 12).

⁶² KM 3: 69.

⁶³ KM 3: 69. On the prophet Jonah in Islam see Busse 2001–2006: EQ. The Qur'ān 29:14 says that Noah lived for “a thousand years minus fifty”, see Brinner 2001–2006: EQ.

Many comments by the author deal with the practice of medicine. He generally advises relinquishing medicine and instead adjusting nutrition as far as possible, on the grounds that all medicaments cause side effects (*tabārīḥ al-dawā'*).⁶⁴ He rejects the opinion of some physicians that patients with a hot temperament or fever may not be fed with *kishkiyya*. On the contrary, he does not object to feeding this to patients, so long as they do not have fever.⁶⁵

The author's comments point to a community of physicians vividly debating and exchanging clinical experience. Clearly there were divergent opinions on the identity of some herbs, such as common melilot (*'iklīl al-malik*),⁶⁶ clinical practices and concepts.

3.5 Bio-bibliographical data on 'Abū Muḥammad al-'Azdī

Ḥammūdī, the editor of *Kitāb al-mā'*, identifies its author as 'Abū Muḥammad al-'Azdī. Our information on this physician is rudimentary and comes from Ibn 'Abī 'Uṣaybi'a (d. 668/1270), who devotes a short paragraph to 'Abū Muḥammad al-'Azdī in his history of physicians, *'Uyūn al-'anbā' fī ṭabaqāt al-'aṭibbā'* (The best accounts of the classes of physicians) under the name Ibn al-Dhahabī⁶⁷:

He is 'Abū Muḥammad 'Abdallāh b. Muḥammad al-'Azdī, known as Ibn al-Dhahabī. He was devoted to the art of medicine (*ṣinā'at al-ṭibb*) and to reading books of philosophy. He was fond of alchemy (*ṣinā'at al-kīmiyā'*) and eager to learn it (*mujtahid fī ṭalabihā*). He died in Valencia (Balansiyyā) in Jumādā II in 456/1064. Ibn al-Dhahabī authored a treatise on the fact that water does not nourish (*maqāla fī anna l-mā' lā yaḡdhū*).⁶⁸

Ḥammūdī arrived at his conclusion through deduction. He assumes that the author was born in Ṣuḥār because of the verse cited in this entry on ardent love for the motherland and therefore he must have belonged to the 'Azd. Furthermore, Ḥammūdī considers the remarks on al-Andalus as evidence that the author had lived there. Since Ibn al-Dhahabī died in Valencia and was named al-'Azdī, Ḥammūdī concludes that Ibn al-Dhahabī and the author of *Kitāb al-mā'* are identical. Furthermore, the life data of the scholars with whom the author studied, i. e. Ibn Sīnā (d. 428/1037), al-Bīrūnī (d. 440/1048) and al-Tha'ālibī (d. 429/1038) do not contradict the death year of al-'Azdī (d. 456/1064). Nevertheless, we cannot draw

64 KM 1: 114.

65 KM 3: 266. *Kishkiyya* is made of wheat flour and sour milk (see KM 3: 266 and Dozy 1927: s. v. كشكية).

66 KM 3: 273.

67 KM 1: 8–10.

68 Ibn 'Abī 'Uṣaybi'a 1998: 456–457.

any certain conclusions, because the age of al-'Azdi at his death is not known. And the first arguments are based only on circumstantial evidence. Besides, Ibn 'Abī 'Uṣaybi'a does not mention any lexicon written by Ibn al-Dhahabī but only a treatise on water considering dietetic aspects, as the title suggests. As a result, the very scarce information passed down to us on Ibn al-Dhahabī does not permit a definitive conclusion, that he was the author of *Kitāb al-mā'*.

3.6 *Kitāb al-mā'*

Kitāb al-mā' was discovered by chance by Hādī Ḥasan Ḥammūdī during his tenure as a professor at the Oran University in Algeria in 1973–4. He discovered two manuscripts of the medical lexicon in the private collection of Shaykh Ibn 'Āshūr 'Aḥmad b. 'Abd al-Qādir al-Tihartī.⁶⁹ The first manuscript was read under the tutelage of 'Abū al-Ḥakam 'Ubaydallāh b. al-Muẓaffar al-Marīnī al-Maghribī, a physician at the Bimaristān in Baghdad, on 6 Dhū l-Qa'da 522 / 1 November 1128, and copied by 'Abd al-Wadūd b. Yaḥyā b. 'Abbās al-Maghribī al-Andalusī.⁷⁰ This manuscript was purchased by Muḥammad Rājī al-Tihartī on his pilgrimage tour in 1012/1603–04. The second manuscript is allegedly copied from the first by al-Tihartī himself.⁷¹

The colophon of the first manuscript gives us important clues on dating the lexicon. It indicates that the book was written before the year 522/1128. If we consider that the author of *Kitāb al-mā'* depended heavily on *al-Qānūn fī l-ṭibb*, since he quotes verbatim some passages taken from it, he must have possessed a copy of it.⁷² But if we consider the story mentioned by Ibn 'Abī 'Uṣaybi'a on the transmission of *Kitāb al-Qānūn* to al-Andalus, the book was first introduced to al-Andalus during the live time of 'Abū l-'Alā' b. Zuhr (d. 525/1131), i. e. between ca. 484/1091 and 525/1131.⁷³ A tradesman brought 'Abū l-'Alā' a copy of the book from Iraq (*wa-fī zamānihī waṣala Kitāb al-Qānūn fī l-ṭibb li-bn Sīnā 'ilā l-Maghrib [...] 'inna rajulan min al-tujjār jalaba min al-'Irāq 'ilā l-'Andalus nuskha min hādihā l-kitāb*). But, 'Abū l-'Alā' b. Zuhr was not satisfied with it and used its

⁶⁹ KM 1: 9.

⁷⁰ KM 1: 14–15.

⁷¹ KM 1: 15–16.

⁷² See the section "Cited authorities and intertextuality", in which several passages in *Kitāb al-mā'* and *al-Qānūn fī l-ṭibb* are compared.

⁷³ I would like to thank one of the anonymous reviewers for pointing out this story. 'Abū l-'Alā' b. Zuhr (d. 525/1131) was a famous physician from Córdoba and the father of 'Abū Marwān 'Abd al-Malik b. 'Abī l-'Alā' b. Zuhr, the famous Avenzoar who was born in 484/1091 or 487/1094 (Ullmann 1970: 162).

pages to prescribe recipes to his patients.⁷⁴ He also wrote a treatise criticising Ibn Sīnā's book on simple drugs *Fī l-radd 'alā 'Abī 'Alī b. Sīnā fī mawāḍi' min kitābihī al-'adwiya al-mufrada*.⁷⁵

This story raises more questions concerning the author of *Kitāb al-mā'*. If we consider the years of death of his teachers, i. e. Ibn Sīnā (d. 428/1037), al-Bīrūnī (d. 440/1048) and al-Tha'ālibī (d. 429/1038), as well as the fact that, after years of imprisonment, Ibn Sīnā escaped and lived for fourteen more years at the court of the prince 'Alā' al-Dawla, we might conclude that the author of *Kitāb al-mā'* probably studied with Ibn Sīnā in Iṣfahān between 413/1022 and 428/1037.⁷⁶ This contradictory information might be due to an exaggeration of the story about 'Abū l-'Alā' Ibn Zuhr or because the author did not spend as much time in al-Andalus as has been suggested.

The physician mentioned in the colophon of the first manuscript deserves special attention. 'Abū l-Ḥakam 'Ubaydallāh b. al-Muḥaffar al-Marīnī al-Maghribī is probably identical with 'Abū l-Ḥakam mentioned in Ibn 'Abī 'Uṣaybi'a's history of physicians. 'Abū l-Ḥakam 'Ubaydallāh b. al-Muḥaffar b. 'Abdallah al-Bāhilī al-Andalusī lived in Damascus, travelled to Baghdad and Basra but went back to Damascus where he died on 6 Dhū l-Qa'da 549 / 12 January 1155. He was a competent physician who also played the oud and composed poetry, but he was known for his fondness of jocosity (*lahū*), profligacy (*khalā'a*) and wine (*muḥibb li-l-shurb*). He even was an alcoholic (*mudmin 'alayhi*).⁷⁷ Ibn 'Abī 'Uṣaybi'a mentions only one book by 'Abū l-Ḥakam, namely a collection of poems called *Nahj al-waḍā'a* (The course of decadence).⁷⁸ It is unlikely that 'Abū l-Ḥakam was the author of *Kitāb al-mā'*, because he seems to have had quite different areas of interest and because Ibn 'Abī 'Uṣaybi'a does not mention any medical compilation written by him. Since he had a license to teach *Kitāb al-mā'*, as the words "*qara'tu 'alā 'Abī l-Ḥakam*" indicate, he might have himself been a student of the author of *Kitāb al-mā'*.

3.7 Title, scope and structure of *Kitāb al-mā'*

The author named his lexicon *Kitāb al-mā'* after its first entry, on water (*mā'*), as he explains in the preface.⁷⁹ In this, he follows the example of al-Khalīl b.

74 Ibn 'Abī 'Uṣaybi'a 1998: 474–475.

75 Ibn 'Abī 'Uṣaybi'a 1998: 476.

76 Goichon 2012: EI 2nd ed.

77 Ibn 'Abī 'Uṣaybi'a 1998: 569–570

78 Ibn 'Abī 'Uṣaybi'a 1998: 581.

79 KM 1: 30.

'Aḥmad al-Farāhīdī (d. c.175/791), the compiler of *Kitāb al-'ayn*, who also named his own dictionary after the first lemma (*sammaytuhū Kitāb al-mā' bi-sm 'awwal 'abwābihī 'alā naḥw mā rasamahū 'Abū 'Abd al-Raḥmān al-Khalīl*).⁸⁰

The author pays great tribute to al-Khalīl for his masterwork *Kitāb al-'ayn*, stating that it is superior to its precursors (*bazza bihī man kāna qablahū*) and insurmountable by his successors (*'annā bihī man jā'a ba'dahū*), comprising all words and meanings of the Arabic language (*'aḥṣā fi-hi 'alfāzahā wa-ma'āniyahā*).⁸¹ This tribute also manifests itself in the invocation of the eulogy "*raḥimahū llāh*" (may Allah be merciful to him) after al-Khalīl's name whenever he is cited, a practice reserved for al-Khalīl among all quoted authorities. Ḥammūdī suggests another reason for the close relationship to al-Khalīl, on the assumption that the compiler is 'Abū Muḥammad 'Abdallāh b. Muḥammad al-'Azdī. Since the famous Arab philologist was born in Oman and grew up in Baṣra, where he died in 175/791,⁸² both scholars share the same origin, namely the 'Azd tribe.⁸³

Despite his profound respect for al-Khalīl, the author follows a different system of arrangement in his medical dictionary. Al-Khalīl had arranged his lexicon according to a phonological principle, depending on the place of articulation of sounds. The author of *Kitāb al-mā'*, however, follows the alphabetical system of *'alif, bā', tā', thā'*, according to the first radical of the root, as he explains in his preface.⁸⁴

The author addresses his work to physicians as well as to laymen. Since the language of the physicians (*'abnā' ṣan'atinā*) was full of mistakes (*ghalaṭ*), solecism (*lahn*), ambiguity (*'ujma*), and transgression (*shaṭaṭ*), he decided to write a book combining medicine with Arabic philology (*yajma' bayn al-ṭibb wa-l-'arabiyya*), explaining maladies, their causes, and their therapies, as well as plants, animals and human organs that relate to these maladies or cures.⁸⁵ He wishes especially to support physicians who want to know the Arabic nomenclature of

⁸⁰ On the biography of al-Khalīl b. 'Aḥmad see Sellheim 2012: EI 2nd ed.; on the debate concerning the authorship of *Kitāb al-'ayn*, see Baalbaki 2014: 284–289, on the influence of *Kitāb al-'ayn* on later lexica see Wild 1965: 58–91.

⁸¹ KM 1: 30. The last remark is probably exaggerated. Although the roots in *Kitāb al-'ayn* are exhaustive, the derivatives which are listed under the roots are not extensive and their explanations are brief. Later Arabic dictionaries contain much more derivations and detailed explanations (Baalbaki 2014: 298). These works must have been known to the author since he quotes them (see the section "Cited Authorities and Intertextuality").

⁸² After Zubaydī, *Ṭabaqāt* see Sellheim 2012: EI 2nd ed.

⁸³ KM 1: 10–12.

⁸⁴ KM 1: 30.

⁸⁵ KM 1: 30.

their devices and the Arabic terms they need for their profession (*mus'ifan li-l-ṭabīb al-rāghib fī ta'rib lisānihī wa-lawāzim ṣan'atihī wa-'ālāt mihnatihī*).⁸⁶

At the same time, he addresses his dictionary to laymen (*min ghayr al-'aṭibbā'*) who have the ambition of becoming acquainted with the medical art (*li-man samat bihī himmatuhū min ghayr al-'aṭibbā' 'ilā 'an yata'arraf ṣan'at al-ṭibb*). This is especially because contemporary physicians (*'aṭibbā' 'aṣrinā*), medicine men (*mutaṭabbibūn*), apothecaries (*ṣayādila*), spice dealers (*'aṭṭārūn*), surgeons (*'ahl al-jirāha*), anatomists (*'ahl al-tashrīh*), and oculists (*kaḥḥālūn*) use foreign languages in preference to Arabic and boast about this among their colleagues, or try to communicate unclearly in the presence of their patients. All these reasons motivate him to push back against non-Arabic vocabulary used by physicians in favour of Arabic (*fa-jahidtu jahdī 'an 'u'ida l-'a'jamī min lafẓ al-'aṭibbā' 'ilā rusūm lisān al-'arab*).⁸⁷

3.8 The content of *Kitāb al-mā'*

The author includes lemmata from various different fields of knowledge in his medical lexicon. From the field of medicine in the narrow sense, we find the vocabulary of anatomy, with brief explanations of organs, as well as the terms for maladies and explanations of their causes, symptoms, and therapies. In addition, we find terms of dietetics such as sport (*riyāda*),⁸⁸ bathing (*ḥammām*)⁸⁹ and sleep (*nawm*),⁹⁰ terms of physiology such as sense (*ḥiss*),⁹¹ movement (*ḥaraka*),⁹² voice (*ṣawt*)⁹³ and forgetfulness (*nisyān*),⁹⁴ terms of natural philosophy such as temperament (*mizāj*),⁹⁵ nature (*ṭabī'a*),⁹⁶ water (*mā'*),⁹⁷ air (*hawā'*),⁹⁸ heat (*ḥarāra*),⁹⁹ and also basic medical terms such as health (*ṣiḥḥa*)¹⁰⁰ and illness (*marad*).¹⁰¹

86 KM 1: 31.

87 KM 1: 31.

88 KM 2: 189.

89 KM 1: 363–364.

90 KM 3: 439.

91 KM 1: 332.

92 KM 1: 323.

93 KM 2: 421.

94 KM 3: 48.

95 KM 3: 348.

96 KM 2: 452.

97 KM 1: 33.

98 KM 3: 462.

99 KM 1: 317.

100 KM 2: 384.

101 KM 3: 344.

The author considers the terms that describe psychological conditions and emotions such as sorrow (*hamm*),¹⁰² sadness (*shajan*),¹⁰³ boredom (*sa'āma*),¹⁰⁴ rage (*ghaḍab*),¹⁰⁵ and envy (*ḥasad*).¹⁰⁶ Closely related to these are the terms that describe personality traits, such as greed (*bukhl*)¹⁰⁷ or the hastiness of youth (*ṣabwa*).¹⁰⁸ He also mentions terms for physical attributes such as beauty (*ḥusn*),¹⁰⁹ ugliness (*qubḥ*),¹¹⁰ and such very specific characteristics as the condition of intense whiteness of the visible part of the eyeball together with intense blackness of the iris (*ḥūr*).¹¹¹

The author pays special attention to terms in the field of pharmacy. We find terms for drug forms, such as powders (*sufūf*),¹¹² electuaries (*la'ūq*),¹¹³ and snuffs (*su'ūt*)¹¹⁴; for instruments and utensils, such as jug (*'ibrīq*)¹¹⁵ and "sa'n,"¹¹⁶ a leather bucket used to prepare wine; for units of weights, such as carat (*qīrāt*)¹¹⁷ and the unity of two grains (*tassūj*)¹¹⁸; and terms for simple drugs, be they mineral, animal, or botanical. Entries in the latter category contain information on the origin of the nomenclature if foreign, the description of the drug, its geographical origin, the parts used, quality, degree, occult properties, application forms, indications, doses, toxicity, and substitution (*badal*).¹¹⁹ At the end we find terms for popular composed remedies, such as *tiryāq*,¹²⁰ with flesh of vipers, and *ghāliyā*,¹²¹ a mixture of ambergris (*'anbar*), musk (*misk*), and agarwood (*'ūd*).

102 KM 3: 459.

103 KM 2: 333.

104 KM 2: 233.

105 KM 3: 105.

106 KM 1: 331.

107 KM 1: 110.

108 KM 2: 383.

109 KM 1: 333.

110 KM 3: 182.

111 KM 1: 378.

112 KM 2: 266.

113 KM 3: 307. According to *Kitāb al-mā'*, electuary is a paste taken orally by licking to prolong the delivery to the stomach (KM 3: 307).

114 KM 2: 258.

115 KM 1: 121.

116 KM 2: 262.

117 KM 1: 227.

118 KM 2: 462.

119 See for example the entry on common fumitory (*shāhtaraj*) in *Kitāb al-mā'* (KM 2: 323–324).

120 KM 1: 194.

121 KM 3: 111.

In addition to drugs of animal and botanical origin that are to be applied medically, the lexicon contains terms for additional plants and animals that are used as foodstuffs or belong to the flora of geographical regions with which the author is acquainted, including the names of such fabulous creatures as the bird *samandal*.¹²² Terms of foodstuffs are also included, among them bread (*khubz*),¹²³ butter (*zubb*),¹²⁴ milk (*laban*),¹²⁵ and the names of dishes used to nourish patients, such as the bouillons *zayrabāj*¹²⁶ and *'asfīdbāj*.¹²⁷

All the way through the dictionary, we find numerous common words related to all these fields. For example, a physician who applies his therapy too incautiously and errs towards imprecision is called *'ahwas*.¹²⁸ If a patient's health deteriorates and he becomes ill again, this is described with the expression *qamasa l-marīd*.¹²⁹ The construction *duktu l-dawā'* means to pulverise the drugs to a powder and mix its constituents.¹³⁰

The final category includes religious terms. In the dictionary, we find lemmata from general religious subjects such as the word *ḥarām*¹³¹ to the names of God, such as *dayyān*,¹³² and religious practices such as praying (*ṣalāt*)¹³³ and fasting (*ṣawm*).¹³⁴ The explanations are brief, so long as they are not related to physical or medical topics. In the entry on fasting (*ṣawm*), the author encourages fasting because it greatly improves the health and dissolves impurities if it is practised moderately during the times determined

122 KM 2: 297. According to *Kitāb al-mā'*, *samandal* is a white bird that lives in China. It can be cooked and headgears are made from its feathers. When it becomes old it throws itself in embers and thus restores its youth.

123 KM 2: 6.

124 KM 2: 201.

125 KM 3: 392.

126 KM 2: 205. *Zayrabāj* is a spiced bouillon. According to *Kitāb al-mā'*, it is prepared from meat (*laḥm*), vinegar (*khall*) and dried fruits (*fawākih yābisa*) with saffron (*za'farān*) and sharp spices (*'afāwiyā ḥarra*). It is sweetened with sugar (*sukkar*) or honey (*'asal*) (KM 2: 205). On the preparation of meat juices (*mā' al-laḥm*) see Nasrallah 2007: 438–441.

127 KM 2: 264. *'Asfīdbāj* is a bouillon without any kind of spices (KM 2: 264). On the preparation of meat juices (*mā' al-laḥm*) see Nasrallah 2007: 438–441.

128 KM 1: 379.

129 KM 3: 224.

130 KM 2: 97.

131 KM 1: 327.

132 KM 2: 99.

133 KM 2: 413–414.

134 KM 2: 422.

according to Islamic law (*lahū [al-ṣawm] ta'thīr 'ajīb fī ḥifẓ al-ṣiḥḥa wa-'idhābat al-faḍalāt 'idhā kāna bi-'tidāl wa-waqa'a fī 'afḍal 'awqātihī shar'an*).¹³⁵

The author neglected the topics of astrology and magic, so that there are few entries on cosmic terms. These include linguistic and on occasion astronomical explanations without any indication of influences on human beings that are caused by stars or planets. The entry on “the moon” (*qamar*) merely includes the explanation that this expression is used only after the second day of the lunar month.¹³⁶ In the same vein, the entry on “star” (*najm*) only contains an explanation of possible references to the Pleiades (*thurayya*). Then the author mentions some allegations that this star constellation was causing maladies of animals, plants and humans.¹³⁷

Regarding magic, the entries containing explanations of related words are also rare and restricted to linguistic aspects. Relevant terms such as *ṭilasm* (talisman) or *ruḳiyya* (amulet) are not included. The term *tamīma* (amulet) is explained as a guarding amulet that humans carry (*ta'wītha tu'allaq 'alā l-'insān*).¹³⁸ The author adds a hadith that points to a rejection of amulets: “May God not help somebody carrying an amulet to complete [his task] successfully.” (*man 'allaqa tamīma fa-lā 'atamma llāh lahū*).¹³⁹

Nevertheless, the author acknowledges the existence of occult properties (*khāṣiyya* pl. *khawāṣṣ*) as a natural phenomenon, with reference to Ibn Sīnā.¹⁴⁰ Referring to the magnet that can make other metal objects move towards it, the author legitimises the occult effects of substances that do not display effects according to the principle “*contraria contrariis*” but according to sympathy and can only be detected by observation.¹⁴¹ In this regard, the author advises in cases of croup (*khunāq*) to bind a purple thread that was used to strangle a snake around the neck of the patient.¹⁴²

135 KM 2: 422.

136 KM 3: 223.

137 KM 3: 396. The time of the year when the Pleiades are visible for the first time (in May) was deemed to be very unhealthy, especially for to the eyes, both by the Greeks (Hübner 2006: NP) and the ancient Arabs (Kunitzsch/Ullmann 1992: 31).

138 KM 1: 206.

139 KM 1: 206.

140 KM 2: 24–26.

141 KM 2: 24–26. For a similar rationalistic justification of the existence of “sympathetic properties” see *Risāla fī l-khawāṣṣ* of Ibn al-Jazzār (Käs 2012: 30–31) and the chapter on “sympathetic properties” in *Firdaws al-ḥikma fī l-ṭibb* (al-Ṭabarī 1928: 356)

142 KM 2: 53.

4 Content of sections and lemmata

As explained above, the lemmata are arranged by the first radical of their roots in alphabetical order, after the system 'alif, bā', tā', thā' and so on. The sections of the roots contain the lemmata, but these are not arranged by alphabetical system or model of derivation. Nevertheless, words that differ only in their vocalisation generally follow each other. For example, the root sh-f-w contains relatively numerous lemmata, arranged in the following order¹⁴³:

1. The infinitive *shifā* [sic], referring to a medicine that cures;
2. The verb *shafā*, meaning to be cured by God;
3. The derived verb 'ashfā, with the meaning "to cure someone";
4. The noun *shafā* [sic], with the meaning "edge";
5. The construction *dār al-shifā'* (house of healing), or hospital;
6. The phrase 'ashfā l-marīḍ 'alā l-mawt (the patient is close to dying);
7. The infinitive *shifā'*, in the meaning of being cured;
8. The derived verb *istashfā*, meaning seeking healing; and last,
9. The derived verb 'ashfā, meaning curing someone by giving him a medicine.

No systematic arrangement can be recognised. The repetition of the same word used in several different senses could be an indication that the author had consulted several books, adopting a different meaning from each one.

The meaning of the lemmata is explained concisely. If medical and pharmacognostic information is given, the length of an entry may be greatly extended. In addition to medical and pharmaceutical information, the author gives linguistic remarks as to vocalisation and its variations,¹⁴⁴ writing varieties,¹⁴⁵ plural and feminine forms, gender,¹⁴⁶ morphological patterns (*mizān ṣarfī*), and derivations such as infinitive or adjectival forms. The author explains collocations¹⁴⁷ and polysemous words. The word *khardal*, for example, has three meanings: the seeds of mustard, lassitude deriving from shyness or humiliation, and a condition of confusion in which no solution can be found.¹⁴⁸ The author

143 KM 2: 348.

144 For example, peppermint can be vocalised in Arabic as *ni'nā'*, *na'na'* and *nu'nu'*, see KM 3: 421.

145 For example, thyme can be written in Arabic with *sīn* or *šād* as *sa'tar* or *ša'tar*, see KM 2: 257.

146 The author points especially to nouns with double genus, i. e. nomina that could be considered as masculine or feminine, for example the molar tooth "*ḍīrs*," see KM 2: 436.

147 For example, the verb *khamada* could be combined with different subjects, resulting in a specific meaning: *khamada l-raḡul*: to be astonished, *khamada l-ma'lūl*: a patient dies or become unconscious, *khamadat ḥummāhu*: the fever regressed, *khamadat al-nār*: the fire is weakening, see KM 2:42.

148 KM 2:14.

sometimes gives the meaning of similar words that differ slightly in vocalisation from the considered one, even if such other meanings are not related to the fields that interest the author. For example, the word *sha'ab* means the distance between the two shoulders (*bu'd mā bayn al-mankibayn*), but the author also gives the meaning of *sha'b* as great tribe (*qabila 'aẓīma*) and *shi'b* as a mountain road, as well as *shu'ab* meaning fingers.¹⁴⁹

The author explains the meaning of foreign terminology, mainly of Persian (*fārisī*) or Greek (*yūnānī* or *rūmī*) origin, and usually gives an Arabic synonym. Terms of Persian origin are abundant, especially names of plants and foodstuffs, probably because the author studied with several scholars in Transoxania. A typical example is common fumitory (*shāhtaraj*): “It is an arabised name from the Persian *shāh tara*, which means the sultan of legumes.”¹⁵⁰ Greek terms refer especially to diseases such as *diyānīṭis*,¹⁵¹ which is supposed literally to mean “wheel,” and *sāqafallis*,¹⁵² which means the decay and death of an organ. Interestingly, the author does not give an Arabic synonym for these terms of maladies. This might indicate that Greek terminology was already well known in Arabic at that time. On the other hand, the author often gives the Arabic names of plants: scilla is named *'isqil* in Greek and *baṣal al-fa'r* (bulb of rats) in Arabic.¹⁵³ Other languages occasionally mentioned are Sanskrit (*hindīyya*), as in *shīṭarj* (pepperwort) from *jitrak*,¹⁵⁴ the Berber language (*barbarīyya*), as in *'iṭrilāl* (ptychotis),¹⁵⁵ and Nabataean language (*nabaṭīyya*), as in *ḥandaqūq*¹⁵⁶ (common melilot).

The dictionary contains regional variations and dialect expressions. The author explains vernacular nomenclature in different regions of the Islamic

149 KM 2: 343.

150 KM 2: 323. Interestingly, al-Bīrūnī explains the name as ‘the legume of the King’, so that the genitive construction seems to have been reversed by the author of *Kitāb al-mā'* (al-Bīrūnī 1973: I, 386). Further examples are *jāwars* (KM 1: 241), *dūgh* (KM 2: 97), *sīb* (KM 2: 314) i. a.

151 KM 2: 99. The alteration of *diyābīṭis* to *diyānīṭis* was apparently widespread in manuscripts and editions (see Ibn Sīnā 1987: II, 1580–1583). *Diyānīṭis* was considered a malady of the bladder that is caused by the disability of the bladder to hold back fluids that had been drunk (Ibn Sīnā 1987: II, 1580). This malady is today called diabetes mellitus. Only in the late nineteenth century were the function of the pancreas and the causes of diabetes discovered (See Porter 1997: 566–567)

152 KM 2: 267. This ailment is transliterated as *safāqlūs* in Ibn Sīnā's *al-Qānūn fi l-ṭibb*. Ibn Sīnā differentiates between gangrene (*ghangharīnā*) that is the decay of flesh and *safāqlūs* that includes the decay of the bones as well (Ibn Sīnā 1987: III, 1920–1921).

153 KM: 2: 278.

154 KM 2:342.

155 KM 3: 96.

156 KM 1: 376.

world for maladies, simple drugs, or words used by laymen to describe an ailment. Such remarks seem to indicate that physicians in the western Islamic world used some medical terms with partly deviated meaning:

Hot hematic tumour of the conjunctiva is called *ramad* and the other tumours of conjunctiva are called *takaddur*. In al-Andalus and the Maghrib, however, the term *ramad* is used to indicate every kind of tumour of the conjunctiva, be it hot or cold, and the term *takaddur* is used for indicating the first phase of *ramad*, or the simple form of it, especially if it is caused by external factors such as dust or the heat of the sun.¹⁵⁷

The author gives special emphasis to the regional names for simple drugs. He remarks that the word *'iṭrilāl* originates from a Berber language and literally means a bird's foot, its Arabic name being *rijl al-ghurāb* (crow's foot).¹⁵⁸ Similarly, field eryngo, in Arabic *qirṣa'na*, is called *shuwaykat 'Ibrāhīm* (spicule of Abraham) or *baqla yahūdiyya* (Jewish purslane) in al-Andalus.¹⁵⁹ *Yarbaṭūra* means *baḥūr al-'akrād* (Kurd's olibanum) in the language of al-Andalus.¹⁶⁰ Nevertheless, the origin of some nomenclature is unknown to the author. He points this out: "I have heard some people calling *'azādrakht* (chinaberry tree) *ḍāḥik* but I do not know from where this name came"¹⁶¹

The *Kitāb al-mā'* also mentions some words that were used by common people (*'āmmī* or *'awāmm*). If a common man complains of his *fu'ād*, that means he is complaining about the upper part of his stomach (*fam al-ma'ida [sic]*).¹⁶² *Al-fāthūr* is a piece of furniture with a flat top supported by legs on which food is served; in Iraq this is called *ṭasht khān* by commoners, but in the Levant "board of alabaster" (*khiwān muttakhadh min al-rukhām*).¹⁶³

Another philological aspect of the dictionary is that it provides quotations relevant to the meaning (*shawāhid*) of some words by citing the Qur'ān,¹⁶⁴ hadith,¹⁶⁵ or

157 KM 2: 173.

158 KM 3: 96.

159 KM 3:195.

160 KM 3: 505.

161 KM 1: 57.

162 KM 3: 125. *Fu'ād* means the heart (KM 3: 125).

163 KM 3: 133.

164 There are many lemmata that contain verses of the Qur'ān, see for example the first entry on *mā'* (KM 1: 33). Further examples are the entries on *sarā* (KM 2: 256), *zakā* (KM 2: 213) *siqāya* (KM 2: 274) i.a.

165 There are numerous lemmata that contain citations of the Prophet, of 'Alī and of the companions of the Prophet (*ṣaḥāba*): see for example the first entry on *mā'* (KM 1: 35). Further examples are the entries on *salata* (KM 2: 281), *judhām* (KM 1: 253) i. a.

poetry. Verses from poets of both pre-Islamic¹⁶⁶ and later periods¹⁶⁷ are abundant. There are also verses whose author is not named.¹⁶⁸

In addition to technical and philological explanations, the author gives legal Islamic information for some lemmata. In the entry on wine (*khamr*), he discusses the various differing opinions on its prohibition depending on raw materials (dates or grapes) and the physical condition in which it is applied, namely malady, hunger, or thirst.¹⁶⁹ Finally he explains his opinion¹⁷⁰: “For us it is allowed to use [wine] in therapy if the patient is driven by necessity” (*‘indānā yajūzu al-tadāwī bihī ‘in uḍṭurra al-ma‘lūl ‘ilā dhālik*). But he restricts his point of view: “But I do not think that a patient would be driven to it by necessity” (*wa-lā nazunnu ma‘lūl yuḍṭarru ‘ilayhā*). Nevertheless, if the situation arises, wine should be applied in dilute form (*mukhaffafa*) and with other medicaments (*ma‘a dawā’ ākhar*).

4.1 Cited authorities and intertextuality

In the preface of *Kitāb al-mā’*, the author indicates that the medical content of the dictionary is based primarily on information taken from Ibn Sīnā (*al-shaykh al-‘allāma Ibn Sīnā*) and from his own experience (*wa-qad ‘awwaltu fī hādhā l-kitāb ‘alā mā khtabartuhū bi-nafsī*).¹⁷¹ Once we compare the content of the author’s entry *jadhama* with the text on leprosy (*judhām*) in Ibn Sīnā’s *al-Qānūn fī l-ṭibb*, the extent of Ibn Sīnā’s influence on *Kitāb al-mā’* becomes obvious.¹⁷² The author follows a cut-and-paste strategy to extract the

¹⁶⁶ For example, al-Mutalammis (d. 580) (KM 1: 253), al-Nābighah al-Dhubiyānī (d. c. 604) (KM 2: 53).

¹⁶⁷ For example, Jarīr b. ‘Aṭīyya (d. c. 728) (KM 2: 53).

¹⁶⁸ See, for example, the verse under the lemmata *ratama* (KM 2:136). Ḥammūdī identified the author of the verse as ‘Aws b. Ḥajar (d. c. 620).

¹⁶⁹ KM 2: 43.

¹⁷⁰ KM 2: 44. Further examples on legal Islamic topics are to be found in the entries on *sukr* (KM 2:278), *ṣawm* (KM 2: 422), and *judhām* (KM 2: 253) i. a.

¹⁷¹ KM 1: 31.

¹⁷² See Appendix I of this article, citing the entire article on *judhām* (leprosy) (KM 1: 253–255). See also the corresponding article in *al-Qānūn fī l-ṭibb* (Ibn Sīnā 1987: III, 1951–1961). As Dols had pointed out, the term *judhām* could have been translated literally into Latin as *mutillatio*. The translation as *lepra* can be retraced to Constantinus Africanus (d. ca. 1087) who translated the medical textbook of al-Majūsī’s *Kāmil al-ṣinā’a l-ṭibbiyya* into Latin under the title *Liber pantegni*. Constantinus used the biblical term *lepra* to translate the name of the disease *judhām*. His translation was decisive for later translations (see Dols 1979: 326).

essential information on a medical topic. He literally copies individual sentences or short paragraphs that give general definitions of the malady in question, skips passages that give more detailed information, and selects some therapeutic measures and medicines, while neglecting most of the recipes given by Ibn Sīnā. Finally, he pastes the adopted parts together. He might, however, separate the copied paragraphs with citations selected and pasted from another work or with his own observations and comments. In the entry on *judhām*, for example, he gives a general definition of leprosy, then continues presenting philological details and information from the Islamic prophetic tradition, and finally returns to medical topics, explaining the causes, symptoms, and therapies of leprosy.

Nevertheless, he adds medical information and citations absent from Ibn Sīnā's book to the passages taken from *al-Qānūn fī l-ṭibb*. For instance, Ibn Sīnā does not describe the neurological symptoms of leprosy, which are primarily manifested in numbness of the limbs; 'Abū l-Qāsim al-Zahrāwī (d. 400/1009) is thought to be the first Arabic writer to describe these symptoms in his medical textbook, *Kitāb al-taṣrīf*.¹⁷³ In further entries in *Kitāb al-mā'*, physicians other than Ibn Sīnā are quoted, albeit marginally; these include Hippocrates of Kos ('Abūqrāṭ),¹⁷⁴ Galen (Jālīnūs),¹⁷⁵ al-Ḥārith b. Kalada,¹⁷⁶ al-'Isrā'īlī,¹⁷⁷ al-Kindī,¹⁷⁸

173 Dols 1979: 327. Leprosy is caused by infection with *Mycobacterium leprae*, which multiplies in the sheaths of the peripheral nerves. Therefore, losing sensation in local areas of the skin is often the earliest symptom of leprosy. Loss of sensation and poor regulation of local blood supply lead to infection and inflammation without evoking the sensation of pain. Ultimately these infected peripheral tissues (such as fingers, toes, nasal tissues) can be lost, although this process is not directly caused by infection with the leprosy bacillus (See Carmichael 1993: 834).

174 KM 3:125, 295.

175 KM 3: 134, 292.

176 KM 1: 138, 278; KM 3: 65. Al-Ḥārith b. Kalada (d. 13/634-5) was a physician of the early Islamic period who practiced at Mecca and tended on several occasions to the prophet. His personality is surrounded by numerous legends that make it difficult to isolate the historical facts on this physician (see Ullmann 1970: 19–20; Pellat 2012: EI 2nd ed.).

177 KM 1: 71; 2: 145, 244, 410. 'Ishāq b. Sulaymān al-'Isrā'īlī (d. ca. 320/932 or 344/955) was a physician and philosopher whose medical works were translated into Latin relatively early. The best known of them is *Kitāb al-ḥummayāt* (Book of fever), which was translated by Constantinus Africanus as *Liber februm* (Ullmann 1970: 137–138).

178 KM 1: 110, 113, 313; KM 2: 169, 326. Ya'qūb b. 'Ishāq al-Kindī (d. 256/870) allegedly wrote 24 medical works that are for the most part lost. However, fragments of a drug formulary, of a book on laxatives and a treatise on podagra have been passed down (Ullmann 1970: 123, 301).

al-Ṭabarī,¹⁷⁹ and al-Rāzī.¹⁸⁰ In other words, despite borrowing heavily from Ibn Sīnā, the author of *Kitāb al-mā'* is not entirely imitative.

Regarding pharmacognosy, the author is primarily dependent on Ibn Sīnā's *al-Qānūn fī l-ṭibb*, but he also integrates quotations from other scholars, especially al-Bīrūnī and al-Dīnawarī (d. 282/895). As discussed above, the author allegedly studied with al-Bīrūnī. He might therefore have consulted al-Bīrūnī's compilations *Kitāb al-ṣaydana fī l-ṭibb* (The book on medicinal drugs) or *Kitāb al-jamāhir fī ma'rifat al-jawāhir*.¹⁸¹ Although al-Dīnawarī was cited by later philologists, the quotations from al-Dīnawarī in *Kitāb al-mā'* concentrate on botanical descriptions. Therefore, the author might have directly consulted *Kitāb al-nabāt* by al-Dīnawarī.¹⁸²

In his entry on *shāhtaraj* in *Kitāb al-mā'*, as compared with the texts in Ibn Sīnā's *al-Qānūn*, al-Rāzī's *al-Ḥawī* and al-Bīrūnī's *Kitāb al-ṣaydana fī l-ṭibb* (The book on medicinal drugs), the same cut-and-paste strategy can be identified.

179 KM 1: 351; KM 3: 293. 'Alī b. Sahl Rabban al-Ṭabarī (d. ca. 240/855) wrote a comprehensive medical compendium called *Kitāb firdaws al-ḥikma* (The paradise of wisdom) in which he explains Greek and Indian medical concepts and therapies (Ullmann 1970: 119–122).

180 KM 1: 155, 280, 337; KM 2: 126, 148; KM 3: 295, 470, 481. 'Abū Bakr Muḥammad b. Zakariyyā al-Rāzī (251/865–311/923). For details on the medical works of al-Rāzī see Ullmann 1970: 128–136.

181 KM 1: 171, 196; KM 2: 205. For the life and works of al-Bīrūnī see Yano 2013: EI 3rd ed. and Ullmann 1970: 272–273. It is doubtful whether the author adopted any information from the Books of al-Bīrūnī. *Kitāb al-jamāhir fī ma'rifat al-jawāhir* contains very detailed information that is largely uninteresting for a lexicon that offers general information. *Kitāb al-ṣaydana fī l-ṭibb* was completed after the death of al-Bīrūnī, therefore it is unlikely that the author had a copy of it (See Ullmann 1970: 272). Taking the entry on ruby (*yāqūt*) in *Kitāb al-mā'*, which is not included in *al-Qānūn fī l-ṭibb* as a simple drug, and comparing it with the entries on ruby in Bīrūnī's books *Kitāb al-jamāhir* and *Kitāb al-ṣaydana*, no evidence could be found of an adaptation from al-Bīrūnī (See KM 3: 503; al-Bīrūnī 1936: 32–49; al-Bīrūnī 1973: I, 380).

182 KM 1: 142, 373; KM 2: 18, 20; KM 3: 100, 261, 391, 430. The work of al-Dīnawarī is fragmentarily preserved (see Bauer 1988: 39–61; Ḥamidullāh 1973: 19–26). Therefore, it was not possible to compare many entries in *Kitāb al-nabāt* with the corresponding entries in *Kitāb al-mā'*. On the one hand, the entries in which al-Dīnawarī was quoted explicitly are partly preserved. On the other hand, comparing some preserved entries of *Kitāb al-nabāt* such as the entries on herbs (*baql*), honey ('*asal*), gum (*ṣamgh*), (*ḡarqad*) and Caraway (*karāwiyā*) with the corresponding entries in *Kitāb al-mā'* and in the dictionaries of the scholars quoted in *Kitāb al-mā'* no direct adaptation from al-Dīnawarī could be detected (see KM 1: 142, KM 3: 35–37, KM 2: 415–416, KM 3: 100, 261, 391 resp. and compare with al-Dīnawarī 1953: 63–64; al-Dīnawarī 1974: 257–294, 86–104; al-Dīnawarī 1973: 171, 240 resp.). Only one citation of Dīnawarī in *Kitāb al-mā'* might point out that the author directly consulted *Kitāb al-nabāt*, since the informations are not mentioned in the dictionaries used by him. In the entry on *al-naqāwā*, the author mentions the whitening effect of this drug that is used in washing clothes (see KM 3: 430 and al-Dīnawarī 1973: 329).

The explanation of the Persian name for the drug as 'the king of legumes' was probably added by the author himself since there is no explanation of the nomenclature by Ibn Sīnā, while al-Bīrūnī explains the term as 'the legume of the king'.¹⁸³ After that, the author excerpts the main content of Ibn Sīnā's entry on *shāhtaraj* concerning the description of the drug, its quality, degree, indications, application forms, doses, and substitution (*badal*).¹⁸⁴ Once again, he adds explanations that are not mentioned in *al-Qānūn*. They were probably taken from al-Rāzī's works.¹⁸⁵

Regarding philology, the author indicates that he depends on al-Khalīl b. 'Aḥmad to arabise the nomenclature he has collected ('*an 'Abī 'Abd al-Raḥmān al-Khalīl b. 'Aḥmad 'afadtu ta'rib mā kuntu 'aṣṣaltu min 'asmā' wa-musammayāt*).¹⁸⁶ But a comparison of several entries in *Kitāb al-mā'* and *Kitāb al-'ayn* shows that the author did not borrow mainly from al-Khalīl b. 'Aḥmad. Nevertheless, it cannot yet be ascertained from which authorities he mainly adopted his linguistic information. Almost all famous Arabic lexicologists and linguists of the second, third and fourth Islamic centuries are mentioned in *Kitāb al-mā'*. On morphological aspects, the grammarians 'Abū 'Amr b. al-'Alā',¹⁸⁷ Sībawayhi,¹⁸⁸ Quṭrub¹⁸⁹ and Ibn Jinnī¹⁹⁰

183 Compare the entry on common fumitory (*shāhtaraj*) in *Kitāb al-mā'* (KM 2: 323–324) with the entry on the same drug in *Kitāb al-ṣaydana* (al-Bīrūnī 1973, I, 418) and *al-Qānūn fī l-ṭibb* (Ibn Sīnā 1987: I, 733–734).

184 See the entry on common fumitory (*shāhtaraj*) in *Kitāb al-mā'* (KM 2: 323–324) and compare it with the entry on the same simple drug by Ibn Sīnā (Ibn Sīnā 1987: I, 733–734).

185 Not all passages in the entry on *shāhtaraj* in *Kitāb al-mā'* that are taken from sources other than Ibn Sīnā's *al-Qānūn* could be identified in the entry on the same drug in al-Rāzī's *al-Ḥāwī* (al-Rāzī 1955–1970: VIII, 50–51). Nevertheless, a quotation of al-Rāzī by al-Bayṭār's *Kitāb al-jāmi' li-mufradāt al-'adwiya wa-l-'aghdiya* possesses more similarity with the passages in *Kitāb al-mā'* (see Ibn al-Bayṭār 1874: II, 48). The author might have consulted other compilations of Rāzī that remain to be identified.

186 KM 1: 31.

187 KM 2: 157; KM 3: 490. 'Abū 'Amr b. al-'Alā' b. al-'Uryan b. 'Abd Allāh b. al-Ḥusayn al-Tamīmī al-Māzinī al-Baṣrī (d. c. 154–6/770–2) is considered to be the founder of the Baṣran school of grammarians. As a Qur'ān reciter 'Abū 'Amr b. al-'Alā's reading (*qirā'a*) is regarded as one of the seven authoritative ones. Among 'Abū 'Amr's students were Khalīl b. 'Aḥmad, Sībawayhi, al-'Aṣma'ī, 'Abū 'Ubayda i. a. (see Afsaruddin 2009: EI 3th ed.).

188 See for example KM 1: 161, 271; KM 2: 185. 'Abū Bishr 'Amr b. 'Uthmān b. Qanbar (d. c. 180/796) was the most celebrated Arabic grammarian (see Carter 2012: EI 2nd ed.).

189 See for example KM 2: 148. 'Abū 'Alī Muḥammad b. al-Mustanīr was a famous grammarian and lexicographer of Baṣra in the 2nd/8th century. Among his works are *al-Muthallathāt*, *Gharīb al-ḥadīth* and *al-'Aḍḍād* (see Baalbaki 2014: 73, 248–249).

190 See for example KM 1:137; KM 2:161. 'Abū l-Faṭḥ 'Uthmān (d. 392/1002) was a grammarian who founded the science of etymology (*al-ishtiqāq al-'akbar*). Among his works was *al-Munṣif*, on morphological patterns (see Baalbaki 2014: 233).

are often quoted. On meanings and linguistic varieties, numerous lexicologists of *mubawwab* lexica are cited: 'Abū 'Ubayd,¹⁹¹ 'Abū Ḥātim al-Sijistānī,¹⁹² Ibn al-'Anbārī,¹⁹³ al-'Aṣma'ī,¹⁹⁴ al-Farrā',¹⁹⁵ al-Kisā'ī,¹⁹⁶ al-Mubarrad,¹⁹⁷ Tha'lab,¹⁹⁸ Ibn al-'A'rābī,¹⁹⁹ Ibn al-Sikkīt,²⁰⁰ al-Harawī,²⁰¹ Kurā',²⁰² 'Abū

191 See for example KM 1: 289; KM 3: 34. 'Abū 'Ubayd al-Qāsim b. Sallām (d. 224/838) was a grammarian, Qur'ān scholar and lawyer. His chief work is *Gharīb al-ḥadīth* in which he arranged the hadiths according to their authorship (*'isnād*) beginning with prophetic hadiths, followed by *Ṣaḥāba*'s and *Tābi'ūn*'s hadiths (see Baalbaki 2014: 74).

192 See for example KM 2: 468. 'Abū Ḥātim al-Sijistānī, Sahl b. Muḥammad al-Jushamī (d. 255/869), was an Arab philologist who left several *mubawwab* works such as *al-Karm* (grape), *al-Nakhla* (palm tree) and *al-Farq* (The difference) (see Baalbaki 2014: 138, 149).

193 See for example KM 3: 62. 'Abū Bakr Muḥammad b. al-Qāsim b. Muḥammad b. Bashshār al-'Anbārī (271–328/885–940) was an eminent Arab philologist of the 'Abbāsīd period. His dictionary *al-'Aḍḍād* (words with two contradictory meanings) contains 357 words, the largest collection of the genre (see Baalbaki 2014: 196–197).

194 See for example KM 3: 14; KM 3: 62. Al-'Aṣma'ī, 'Abū Sa'īd 'Abd al-Malik b. Qurayb al-Bāhilī (122–213 or 216/740–828 or 831), was a famous Arab philologist who left several *mubawwab* lexica such as *al-Farq* (the difference) on human body, *Khalq al-'insān* (the human body), *al-'Ibīl* (camels), *al-Khayl* (horses), *al-Nabāt wa-l-shajar* (plants and trees) (see Baalbaki 2014: 141–142, 144–146, 149–153).

195 See for example KM 1: 285, 304; KM 3: 397. 'Abū Zakariyyā' al-Farrā', Yaḥyā b. Ziyād al-Daylamī (144–207/761–822) was a grammarian of the Kufan school. He wrote several *mubawwab* works such as *al-'Ayyam wa-l-layālī wa-l-shuhūr* (days, nights and months) (see Baalbaki 2014: 156–157).

196 See for example KM 1: 299; KM 2: 395. 'Abū l-Ḥasan 'Alī b. Ḥamza b. 'Abd Allāh b. Bahman b. Fayrūz was a philologist and Qur'ān-reader (ca. 119-89/737-805). He wrote several *mubawwab* works such as *Mā talḥan fīhi l-'amma* (solecism of common people) and *Kitāb al-mutashābih fī l-Qur'ān* (the self-referentiality of the Qur'ān) (see Baalbaki 2014: 173).

197 See for example KM 1: 161. 'Abū l-'Abbās Muḥammad b. Yazīd b. 'Abd al-'Akbar al-Thumālī al-'Azdī (d. 285/898) was a philologist who compiled *Kitāb al-Kāmil fī l-'adab* (The exhaustive book on Adab). He also wrote several *mubawwab* works such as his work on polysemy *Mā ttafaqa lafzuhū wa-khtalafa ma'nāhu min al-Qur'ān al-majīd* (homonymy in the Qur'ān) (see Baalbaki 2014: 200–203).

198 See for example KM 3: 351. 'Abū l-'Abbās 'Aḥmad b. Yaḥyā b. Zayd b. Sayyār al-Shaybānī (200/815-291/904) was a famous grammarian and philologist of the Kufan school. He wrote several *mubawwab* works such as *al-Faṣīḥ* (eloquent) (see Baalbaki 2014: 175).

199 See for example KM 1: 192; KM 2: 41; KM 3: 21. Muḥammad b. Ziyād 'Abū 'Abd Allāh (150/767-231/846) was a philologist of the Kufan school. Among his *mubawwab* works are *Ṣifāt al-nakhl* (attributes of palm trees) and *Ṣifāt al-zar'* (attributes of plants) (see Baalbaki 2014: 136, 267).

200 See for example KM 3: 14. 'Abū Yūsuf Ya'qūb b. 'Ishāq (d. 244/858) was a celebrated philologist and lexicographer. Among his *mubawwab* works is *al-'Aṣwāt* (phoneme) and *al-'Aḍḍād* (enantionymy) (see Baalbaki 2014: 194–195, 212).

201 KM 1: 381; KM 2: 28, 216; KM 3: 205. al-Harawī refer probably to 'Abū 'Ubayda al-Harawī (d. 401/1011), the compiler of *Kitāb al-gharībayn fī l-Qur'ān wa-l-ḥadīth* (see Baalbaki 2014: 66–68).

202 KM 3: 212. 'Abū l-Ḥasan 'Alī b. al-Ḥasan al-Hunā'ī (d. 310/922), or Kurā' al-Naml or simply Kurā', was a famous lexicologist who compiled two *gharīb* lexica: *al-Muntakhab min*

Zayd,²⁰³ Ibn Khālawayhi,²⁰⁴ al-Khaṭṭābī,²⁰⁵ al-Zajjāj,²⁰⁶ and al-Sīrāfi²⁰⁷. In terms of *mujannas* lexica, four philologists are cited: 'Abū 'Amr al-Shaybānī, the compiler of *Kitāb al-jīm*²⁰⁸; al-'Azharī, the author of *Tahdhīb al-lughā*²⁰⁹; Ibn Durayd, the writer of *Jamharat al-lughā*²¹⁰; and al-Jawharī the compiler of *Tāj al-lughā wa-ṣiḥāḥ al-'arabiyya*²¹¹. Interestingly, several philologists who wrote famous *mujannas* lexica were not mentioned by the author of *Kitāb al-mā'*, namely 'Abū 'Alī al-Qālī (d. 356/967), who wrote *al-Bārī fī l-lughā*, an extensive lexicon arranged according to the phonetic-permutative system²¹²; al-Ṣāḥib b.

gharīb kalām al-'arab and *al-Mujarrad fī gharīb kalām al-'arab wa-lughatihā* (see Baalbaki 2014: 89–92).

203 KM 3: 431. 'Abū Zayd al-'Anṣārī (d. 215/830) was a famous lexicologist who belongs to the early period of data collection. He is known for his *gharīb* lexicon *al-Nawādir fī l-lughā* (see Baalbaki 2014: 87–89).

204 KM 3: 261, 264. 'Abū 'Abd Allāh al-Ḥusayn b. 'Aḥmad b. Khālawayhi (d. 370/980) was a famous grammarian and Qur'ān exegete. Among his works are *risāla fī 'asmā' al-rūḥ*, *Gharīb khalq al-'insān* and *Laysa fī kalām al-'arab* (see Baalbaki 2014: 92–95, 152–153, 157–158).

205 KM 3: 276. Ḥamd b. Muḥammad b. 'Ibrāhīm b. al-Khaṭṭāb 'Abū Sulaymān al-Khaṭṭābī (d. 388/998) was a poet and philologist. Among his books is *Gharīb al-ḥadīth* (see Baalbaki 2014: 73–76).

206 KM 2: 123; KM 3: 397. 'Abū 'Ishāq 'Ibrāhīm b. al-Sarī (c. 230/844–311/923) was an Arabic grammarian who worked most of his life in Baghdad. Among his books are *khalq al-'insān* and *fa'altu wa-'af'altu* (see Baalbaki 2014: 152–153).

207 KM 2:124. 'Abū Sa'īd al-Ḥasan b. 'Abd Allāh b. al-Marzubān (d. 368/979) was a judge and grammarian from Sirāf. His most famous work is his commentary on the *Kitāb* of Sībawayhi (see Baalbaki 2014: 287, 321, 377 and Humbert 2012: EI 2nd ed).

208 See for example KM 2: 27. 'Abū 'Amr al-Shaybānī (d. 206/821) was a famous lexicographer of the Kufan school in the second/eighth century. His Lexicon *Kitāb al-jīm* is generally considered as the first *mujannas* lexicon ordered alphabetically according to the first letter of the root. Nevertheless, it does not contain all items of the language and is restricted to *gharīb* items (see Baalbaki 2014: 332–338).

209 See for example KM 1: 382; KM 2: 29, 166, 214, 266, 233 and KM 3: 14. 'Abū Manṣūr Muḥammad b. 'Aḥmad al-'Azharī (282–370/895–980) was an Arab lexicographer. His chief work is *Tahdhīb al-lughā*, in which he follows the arrangement system of al-Khalīl's *Kitāb al-'ayn* but largely expands the content of the lemmata by adding citations from other sources (see Baalbaki 2014: 311–319).

210 See for example KM 1: 242, 259; KM 3: 71. 'Abū Bakr Muḥammad b. al-Ḥasan al-'Azdi was an Arab philologist and lexicographer, who was born at Baṣra in 223/837 and died in Baghdad in 321/933. His chief work is *Jamharat al-lughā*, the first extensive and exhaustive lexicon after Khalīl's *Kitāb al-'ayn*." (see Baalbaki 2014: 338–347).

211 See for example KM 2: 128; KM 3: 182, 187, 319, 381, 495. 'Abū Naṣr 'Ismā'īl b. Ḥammād (d. c. 400/1010) was a famous Arabic lexicographer of Turkish origin. His lexicon *Tāj al-lughā wa-ṣaḥāḥ al-'arabiyya* was arranged according to the rhyme system (see Baalbaki 2014: 373–381).

212 See Baalbaki 2014: 303–311.

‘Abbād (d. 385/995) who compiled *al-Muḥīṭ fī l-lughā*²¹³; and Ibn Sīdah (d. 458/1066), the author of *al-Muḥkam wa-l-muḥīṭ al-’a’zam*.²¹⁴

A comparison of the root entry *j-dh-m* with the corresponding entries in al-Farāhīdī’s *Kitāb al-’ayn*,²¹⁵ ‘Abū ‘Amr al-Shaybānī’s *Kitāb al-jīm*,²¹⁶ al-Jawharī’s *al-Ṣiḥāḥ*,²¹⁷ al-’Azharī’s *Tahdhīb al-lughā*²¹⁸ and Ibn Durayd’s *Jamharat al-lughā*²¹⁹ shows that the entry is strongly aligned with al-’Azharī’s *Tahdhīb al-lughā*. Nevertheless, the hadith on contagion “You should run away from the leper as one runs away from a lion,” (*firra min al-majdhūm firāraka min al-’asad*) and the following explanations must have been taken directly from *Ṣaḥīḥ al-Bukhārī* since this hadith is not quoted in *Tahdhīb al-lughā*.²²⁰ A general conclusion cannot yet be drawn, however, mainly because the texts in question are highly interconnected. Therefore, further research is required to determine the origin of the passages dealing with linguistic explanations and prophetic traditions.

5 Conclusion

In this paper, I have presented *Kitāb al-mā’*, a medical lexicon of the mid-fifth Islamic century (mid-eleventh century CE) that has received little attention until now. The text is available in an edition by Hādī Ḥasan Ḥammūdī, published by the ministry of culture in the Sultanate of Oman.

The editor of *Kitāb al-mā’* assumed that the author was ‘Abū Muḥammad ‘Abdallāh b. Muḥammad al-’Azdī, known as Ibn al-Dhahabī, a physician born in Ṣuḥār in Oman and deceased in Valencia in 456/1064. This assumption cannot be verified because no explicit information is given in *Kitāb al-mā’*, and also because of the dearth of information about either the compiler of the book or Ibn

²¹³ See Baalbaki 2014: 319–322.

²¹⁴ See Baalbaki 2014: 322–329.

²¹⁵ Compare the entry *j-dh-m* in *Kitāb al-mā’* and in *Kitāb al-’ayn* (KM 1: 253–255 and al-Farāhīdī 1988: s. v. جذم).

²¹⁶ Compare the entry *j-dh-m* in *Kitāb al-mā’* and in *Kitāb al-jīm* (KM 1: 253–255 and al-Shaybānī 1974–1975: s. v. جذم).

²¹⁷ Compare the entry *j-dh-m* in *Kitāb al-mā’* and in *al-Ṣiḥāḥ* (KM 1: 253–255 and al-Jawharī 1990: s. v. جذم).

²¹⁸ Compare the entry *j-dh-m* in *Kitāb al-mā’* and in *Tahdhīb al-lughā* (KM 1: 253–255 and al-’Azharī 1967: s. v. جذم).

²¹⁹ Compare the entry *j-dh-m* in *Kitāb al-mā’* and in *Jamharat al-lughā* (KM 1: 253–255 and Ibn Durayd 1925: s. v. جذم).

²²⁰ See al-Bukhārī 1987: 4, 238.

al-Dhahabī. As far as may be reconstructed from the text alone, the author studied with Ibn Sīnā, al-Bīrūnī, and al-Tha'ālibī. After seeking knowledge in the East of the Islamic world, he moved to al-Andalus and the Maghrib, where he practised medicine. He wrote down interesting observations on the flora and regional nomenclature of plants and animals that make us assume that he travelled to the Arabian peninsula, the Levant, Egypt, and Iraq.

The dictionary contains lemmata in a wide range of fields connected with medicine in one way or another, as well as religious and common words and expressions. It is organised in alphabetical order by 'alif, bā', tā', thā', etc. The entries of the lemmata contain explanations of the meaning of the term, linguistic remarks and exemplifications (*shawāhid*), Islamic legal comments, and medical and pharmaceutical expositions. Noteworthy are the Arabic synonyms and the explanations given for terms of foreign origin and dialectal varieties.

Regarding intertextuality, the author borrowed heavily from Ibn Sīnā's *al-Qānūn fī l-ṭibb*, but integrated his own observations and opinions, as well as quotations from other medical and pharmacognostic authorities if not included in Ibn Sīnā's book. A determination of the origin of the passages dealing with linguistic explanation and prophetic tradition still requires further research. It is clear, however, that contrary to his declaration in the preface, the author of *Kitāb al-mā'* did not borrow mainly from al-Khalīl b. 'Aḥmad al-Farāhidī's *Kitāb al-'ayn*. Some entries are strongly aligned with al-'Azharī's *Tahdhīb al-lughā*, but a general conclusion cannot yet be drawn, mainly because the texts in question seem to be highly interconnected.

Kitāb al-mā' represents a new development in several respects. The dictionary is the first text known to us that combines medical and pharmaceutical with linguistic and Islamic legal knowledge. This combination represents a further integration of previously adopted foreign science with Arabic language and Islamic legislation. Although the author borrows heavily both from Ibn Sīnā and from philological authorities, his work regarding medical and philological content is not merely an imitation. This is supported by his critical remarks, as well as his rejection of traditional and established concepts and practices if they are inconsistent with his own observations. He also adds linguistic and medical explanations.

The compilation points to changes in the reading culture of the fifth Islamic century. Comprising terms from numerous fields related to medicine and health, the dictionary has a universal character. The alphabetical ordering system makes it easier to consult and renders it accessible even to laymen. Layman reading of a medical text is an additional novel feature of this book, and indicates an expansion of the access to knowledge.

Appendix. Translation of the entry (*j-dh-m*)

j-dh-m

Al-jidhm, with *kasra*, means the basis. It can also be vocalised with *fatha*.

The *jidhm* of a tree is the root and the *jidhm* of everything is its foundation. The plural is *'ajdhām* and *judhūm*.

Vocalised with a *fatha*, it means “to split.” *Jadhamahu*, *yajdhimuhū*, *jadhman* means to split something such that it is *jadhīm*.

'Ajdham means a person with a severed hand or a person who has lost his fingertips.

Al-judhām is a malignant disease that happens due to the spread of black bile in the whole body that upsets the balance of the humours in the organs and damages their appearance and form. It might destroy their connection so that they decay and are cut off because of ulceration. It is like a general cancer of the whole body that might ulcerate.

A patient is called *'ajdham* because of the loss of the fingers, i. e. because of their severance [from the body].

A man can be described as *'ajdham* and *majdhūm* in the meaning that he has been afflicted by leprosy (*judhām*).

If infected with leprosy (*judhima*), the person is called *majdhūm*, *mujadhdham* and *'ajdham*.

جذم (KM 1: 253-255)
الجذم، بالكسر: الأصل، ويُفتح.

جذم الشجرة: أصلها. وجذم كل شيء: أصله،
والجمع أجدام، وجدوم.

وبالفتح، القطع، جذمه يجذمه جذماً: قطعه وهو
جذيم.

والأجدم: المقطوع اليد، أو الذي ذهب أنامله.

والجذام: علة رديئة تحدث من انتشار الميرة
السوداء في البدن كله فتفسد مزاج الأعضاء
وهيبتها وشكلها. وربما أفسدت في آخر
اتصالها حتى تتأكل الأعضاء وتسقط سقوطاً
عن تقرح. وهو كسرطان عام للبدن كله،
وربما تقرح وربما لم يتقرح.

وسمي الأجدم بذلك لتجذم الأصابع، أي:
لتقطعها.

ورجل أجدم ومجدوم: نزل به الجذام.

وجذم، فهو مجدوم ومجدم وأجدم.

The hadith of the Prophet, prayer of God be upon him and peace, says: "Whoever memorises the Qur'ān and then forgets it will meet God in a maimed condition (*'ajdham*).

'Abū 'Ubayd says: that means with a severed hand. And concerning the hadith from 'Alī, "Whoever violates his pledge will meet God in a maimed condition (*'ajdham*)", he says, "That means without a hand."

Al-Mutallamis says:

Was I ever anything but the type of person who cuts off one hand with the other, and so becomes mutilated?

Ibn al-'Anbārī says: the meaning of the hadith is that the person is going to meet God with no excuse, without a tongue to speak with, and without an excuse in his hand. And the saying of 'Alī means that he has no excuse.

Some [linguists] give the plural [of *'ajdham*] as *jadhmā* in analogy to *ḥamqā*.

Among the authentic hadiths is the hadith: "You should run away from the leper as one runs away from a lion," and the hadith: "There is no contagion and no bad omen," and also the hadith: "There is no contagion, no *hāma* and no bad omen in the month of Ṣafar." A bedouin said: "O Allah's Apostle! Why are the camels of the desert, which are as beautiful as gazelles, infected with mange, if a mangy camel mixes with them? The prophet, prayer of God be upon him and peace, said: "Who infected the other at first?"

وفي الحديث عن النبي صَلَّى اللهُ عَلَيْهِ وَسَلَّمَ: (مَنْ تَعَلَّمَ الْقُرْآنَ ثُمَّ نَسِيَهُ لَقِيَ اللَّهَ وَهُوَ أَجْذَمٌ).

قال أبو عبيد: أي مقطوع اليد. قال: وفي حديث علي: (مَنْ نَكَّثَ بِيَعْتَهُ لَقِيَ اللَّهَ وَهُوَ أَجْذَمٌ): أي ليست له يد.

وقال المتلمس: وهل كنت إلا مثل قاطع كفه بكف له أخرى فأصبح أجذما.

وقال ابن الأنباري: معنى الحديث: أنه لقي الله وهو أجذم الحجة لا لسان له يتكلم به، ولا حجة في يده. وقول علي يعني ليست له يد، أي: لا حجة له.

وجمع بعضهم جذمى مثل حمقى.

وفي الحديث الصحيح: (فرّ من المجذوم فرارك من الأسد) وفيه: (لا عدوى ولا طيرة). وفيه أيضا: (لا عدوى ولا هامة وصفر). فقال أعرابي: يا رسول الله، فما بال الإبل تكون في الرمل كأنها الظباء فيخالطها البعير الأجرى فيجر بها؟ فقال رسول الله صَلَّى اللهُ عَلَيْهِ وَسَلَّمَ: (فمن أعدى الأول).

There were conflicting opinions on the meaning of *lā 'adwā* (no contagion). The most comprehensible is that it is a rejection of what people had believed in pre-Islamic times, namely that diseases communicate because of their contagious nature, and they did not believe that they come directly from God. This [rejection] is pointed out by [the Prophet's] words "Who infected the other at first?" This means that the first infection with mange was an act of God, as was the second infection and the following infections.

The primary cause of leprosy is a bad temperament of the liver that becomes very hot and dry so that the blood burns and becomes black; or it is a bad temperament of the whole body.

The material cause is foodstuffs of black temperament.

The disease is contagious and can be hereditary.

This disease is called the illness of the lion; some say because it often infects lions, others say because it attacks the face of the leper making it look like the face of a lion in his deformation and his round eyes.

Others say because the disease devours the infected person like a lion devours [its prey].

The light form of the disease is very difficult to cure and the severe form is incurable.

واختلفوا في معنى قوله (لا عدوى)، وأظهر ما قيل في ذلك أنه نفى لما كان يعتقد أهل الجاهلية من أن هذه الأمراض تُعدي بطبعها من غير اعتقاد تقدير الله لذلك. ويدل على هذا قوله: (فمن أعدى الأول) يُشير إلى أن الأول إنما جرب بقضاء الله وقدره فكذاك الثاني وما بعده.

وسبب الجذام الفاعلي الأقدم سوء مزاج الكبد المائل جدا إلى حرارة ويبوسة، فيحترق الدم، ويصير أسود، أو سوء مزاج البدن كله.

وسببه المادي هو الأغذية السوداءوية.

والعلة معدية، وقد تقع بالإرث.

وهذه العلة تُسمى داء الأسد. قيل: إنما سُميت بذلك لأنها كثيرا ما تُعترى الأسد. وقيل لأنها تهجم على وجه صاحبها فتجعل وجهه كوجه الأسد في تعجزه واستدارة عينيه. وقيل لأنها تفترس من تأخذه كافتراس الأسد.

والضعيف منها عسير العلاج. والقوي ميؤوس من علاجه.

This illness gradually damages the temperament of the organs by antagonising the vital quality, i. e. heat and humidity. It finally reaches the main organs and causes death.

It starts from the distal parts of the limbs and spreads slowly to the body. If cancer, which is the mutilation of only one organ, cannot be cured, what can you say about leprosy, which is the cancer of the whole body.

Symptoms

The early symptoms of leprosy are a darkening of the skin colour, appearance of opaque reddish patches in the eyes, difficulty of respiration, hoarseness, excessive sneezing, and thinning and loss of hair. After that the respiration difficulties increase and the sound becomes very raspy, the lips thicken, the arms and feet become numb, and blood bleeds from the nose.

Therapy:

You must apply purifying purgatives. If there is an excess of blood you must apply bloodletting, even if it was from the hands. If this is not possible, do not let blood from the large veins because it might cause more harm than benefit. Bloodletting should be made from the small veins like the vein of the forehead and nose. Bloodletting is necessary in this disease and therefore, you must sometimes let blood from the jugular vein (*wādi*).

وهذه العلة لا تزال تُفسد مزاج الأعضاء بمضادة الكيفية المضادة للحياة أعني الحرارة والرطوبة حتى تَبْلُغ إلى الأعضاء الرئيسية، وهناك تَقْتُل.

وتبتدئ أولاً من الأطراف ثم تدب يسيراً يسيراً إلى البدن. ولما كان السرطان، وهو جذام عضو واحد مما لا بُدَّ له، فما تقول في الجذام الذي هو سرطان البدن كله.

العلامات:

إذا ابتدأ الجذام ابتداء اللون يحمر إلى سواد، ويظهر في العين كمودة إلى حمرة، ويظهر في النفس ضيق، وفي الصوت بحة، ويكثر العطاس، ويأخذ الشعر في الدقة والقلة، ثم يزداد ضيق النفس، ويصير الصوت في غاية البحة وتغلظ الشفتان.

العلاج:

تجب المبادرة إلى الاستفراغات المنقية، ويجب الفصد عند تحقق وجود الدم الكثير ولو من اليدين، وإن لم يتحقق ذلك فلا فصد من العروق الكبار، لأنه ربما يضر أكثر مما ينفع منه، ولكن يُفصد من العروق الصغار كعرق الجبهة والأنف لأن الفصد محتاج إليه في هذه العلة. وربما احتيج إلى فصد الواديج.

One week after bloodletting you must purgate with the purgative paste *lūghādiyā* or with decoctions or pills prepared of dodder (*'afitīmūn*), lavender (*'astūkhūdis*), common polypody (*bisfānīj*), black and chebulic myrobalan (*'ihlilaj 'aswad wa-kābullī*), black hellebore (*kharbaq aswad*), lapis lazuli (*lāzward*) and Armenian bole (*ḥajar 'armanī*). It is beneficial to mix them with the [previous ingredients] (*shaḥm al-ḥanzal*) and scammony (*saqamūniyā*). The hiera picra (*'iyāraj fiqrā*) is useful for lepers especially if it is mixed with scammony and the flesh of vipers or other remedies that contain the flesh of vipers to increase its efficacy.

ثمّ بعد الفصد بأسبوع يُستفرغ يمثّل أيارج لوغاديا ومطبوخات وحبوب متخذة من الأفتيمون والأسطوخوديس والبسفانيج والإهليلج الأسود والكابلي والخربق الأسود واللازورد والحجر الأرمني. ولا يضرّ أن يُخلط بها شحم الحنظل والسقمونيا. وأيارج فيقرا جيد لهم وخصوصا إذا قوّي بالسقمونيا ولحم الأفعى. وما فيه لحمها من أجل الأدوية لهم.

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Bibliography

Primary sources

- al-'Azharī Muḥammad b. 'Aḥmad (1964–1967): *Tahdhīb al-lughā*. Edited by 'Abd al-Salām Muḥammad Hārūn. 15 vols. (Turāthunā). Cairo: al-Dār al-Miṣriyya li-l-Ta'līf wa-l-Tarjama.
- Al-Bīrūnī, 'Abū Rayḥān Muḥammad b. 'Aḥmad (1936): *Kitāb al-jamāhir fī ma'rifat al-jawāhir*. Ḥaydarābād: Maṭba'at Jam'iyyat Dā'irat al-Ma'ārif al-'Uthmāniyya.
- Al-Bīrūnī, 'Abū Rayḥān Muḥammad b. 'Aḥmad (1973): *Al-Biruni's Book on Pharmacy and Materia Medica (Kitāb al-ṣaydana fī l-ṭibb li-'Abī Rayḥān Muḥammad b. 'Aḥmad al-Bīrūnī)*. Edited by Hakim Mohammed Said. 2 vols. (Pakistan Series of Central Asian Studies 1). Karachi: Hamdard National Foundation.
- Al-Bukhārī, Muḥammad b. 'Ismā'īl (1987): *Ṣaḥīḥ al-Bukhārī*. Edited by al-Shaykh Qāsim al-Shammā'ī al-Rifā'ī. 4 vols. Beirut: Dār al-Qalam.
- Al-Dīnawārī, 'Abū Ḥanīfa (1953): *The book of plants of 'Abū Ḥanīfa al-Dīnawārī: Part of the Alphabetical Section*. Edited by Bernhard Lewin with an introduction, notes, indices and a vocabulary of selected words. Uppsala, Wiesbaden: Lundequist, Harrassowitz.

- Al-Dīnawarī, 'Abū Ḥanīfa (1973): *Le dictionnaire botanique d'Abū Ḥanīfa ad-Dīnawarī: Kitāb an-Nabāt, de s à y*. Edited by Ḥamidullāh, Muḥammad. (Textes et traductions d'auteurs orientaux; 5). Caire: Institut Français d'Archéologie Orientale du Caire.
- Al-Dīnawarī, 'Abū Ḥanīfa (1974): *The Book of Plants: Part of the Monograph Section by 'Abū Ḥanīfa ad-Dīnawarī*. Edited by Bernhard Lewin. (Bibliotheca Islamica; vol. 26). Wiesbaden: Franz Steiner Verlag.
- al-Farāhīdī, 'Abd al-Raḥmān al-Khalīl b. 'Aḥmad (1988): *Kitāb al-'ayn*. Edited by Mahdī al-Makhzūmī and 'Ibrāhīm al-Sāmarrā'ī. 8 vols. Beirut: Mu'assasat al-'Alamī li-l-maṭbū'āt.
- Al-Jawharī, 'Ismā'īl b. Ḥammād (1990): *Tāj al-lughā wa-ṣiḥāḥ al-'arabiyya*. Edited by 'Aḥmad 'Abd al-Ghafūr 'Aṭṭār. 7 vols. 4th edition. Beirut: Dār al-'Ilm li-l-Malāyīn.
- Ibn 'Abī 'Uṣaybī'a, 'Aḥmad b. al-Qāsīm (1998): *'Uyūn al-'anbā' fī ṭabaqāt al-'aṭibbā'*. Edited by Muḥammad Bāsīl 'Uyūn al-Sūd. Beirut: Dār al-Kutub al-'Ilmiyya.
- Ibn al-Bayṭār, Ḍiyā' al-Dīn 'Abū Muḥammad 'Abdallāh b. 'Aḥmad al-Andalusī al-'Ashshāb (1874): *Kitāb al-jāmi' li-mufradāt al-'adwiya wa-l-'aghdhīya*. 4 parts in 2 vols. [Beirut]: Dār al-Madīna [s. a.] (Reprint of the first edition: Būlāq 1874).
- Ibn Durayd, 'Abū Bakr Muḥammad b. al-Ḥasan al-'Azdī al-Baṣrī (1925): *Kitāb Jamharat al-lughah*. 4 vols. Beirut: Dār Ṣādir.
- Ibn Sīnā, 'Abū 'Alī l-Ḥusayn b. 'Alī (1975): *al-Ṭabī'iyyāt: al-nabāt*. Edited by 'Abd al-Ḥalīm Muntaṣir et al. (al-Shifā' 2, 7). Cairo: al-Hay'a l-Miṣriyya l-'Āmma li-l-Kitāb.
- Ibn Sīnā, 'Abū 'Alī l-Ḥusayn b. 'Alī (1987): *al-Qānūn fī l-ṭibb ta'lif al-Ḥusayn b. 'Alī Ibn Sīnā*. Edited by 'Idwār al-Qashsh. Foreword by 'Ālī Zī'ūr. 4 vols. Beirut: 'Izz al-Dīn.
- Ibn Ṭayfūr, 'Abū l-Faḍl 'Aḥmad b. 'Abī Ṭāhir al-Mārūzī (1908): *Kitāb balāghāt al-nisā'*. Cairo: Maṭba'at madrasat wālidat 'Abbās al-'Awwal.
- KM: See al-Ṣuḥārī 1996.
- Al-Rāzī, 'Abū Bakr Muḥammad b. Zakarīyā' (1955–1970): *Kitāb al-ḥawī fī l-ṭibb*. 23 parts in 19 vols. Ḥaydarābād: Dā'irat al-Ma'ārif al-'Uthmāniyya.
- Al-Shaybānī, 'Ishāq b. Mirār 'Abū 'Amr (1974–1975): *Kitāb al-jīm*. Edited by 'Ibrāhīm al-'Ibyārī. Cairo: al-Hay'a al-Miṣriyya l-'Āmma li-l-Kitāb.
- Al-Ṣuḥārī, 'Abū Muḥammad 'Abdallāh b. Muḥammad al-'Azdī (1996): *Kitāb al-mā': 'awwal mu'jam ṭibbī lughawī fī l-tārīkh*. Edited by Hādī Ḥasan Ḥammūdī. 3 vols. 'Umān: al-Maṭba'a al-Sharqiyya. [In this paper, this edition is abbreviated as KM.]
- Al-Ṭabarī, 'Abū l-Ḥasan 'Alī b. Sahl Rabban (1928): *Firdaws al-ḥikma fī l-ṭibb*. Edited by Muḥammad Zubayr al-Ṣiddīqī. Berlin: Maṭba' 'Āftāb.
- 'Usāma b. Munqid (1968): *al-Manāzil wa-l-diyār*. Edited by Muṣṭafā Ḥijāzī. Cairo: al-Majlis al-'A'lā li-l-Shu'ūn al-Islāmiyya.
- Al-Warrāq (2003): *al-Warrāq: Source for Arabic Books: al-Maktaba l-turāthiyya*. <http://www.alwaraq.net/Core/index.jsp?option=1> (22. 01. 2017)

Secondary sources

- Afsaruddin, Asma (2009): "Abū 'Amr b. al-'Alā". In: *Encyclopaedia of Islam, Third Edition*. Edited by Kate Fleet, Gudrun Krämer, Denis Matringe, John Nawas and Everett Rowson. 10.1163/1573-3912_ei3_COM_22607 (28. 01. 2017).
- Baalbaki, Ramzi (2014): *The Arabic Lexicographical Tradition: from the 2nd/8th to the 12th/18th century*. (Handbook of Oriental Studies. Section 1, The Near and Middle East; vol. 107). Leiden: Brill.

- Bauer, Thomas (1988): *Das Pflanzenbuch des Abū Hanīfa ad-Dīnawarī: Inhalt, Aufbau, Quellen*. Wiesbaden: Harrassowitz.
- Brinner, William M. (2001–2006): “Noah”. In: *Encyclopaedia of the Qur’ān*. Edited by Jane Dammen McAuliffe, Georgetown University, Washington DC. 10.1163/1875-3922_q3_EQCOM_00134 (14. 08. 2017)
- Busse, Heribert (2001–2006): “Jonah”. In: *Encyclopaedia of the Qur’ān*. Edited by Jane Dammen McAuliffe, Georgetown University, Washington, DC. 10.1163/1875-3922_q3_EQSIM_00240 (14. 08. 2017)
- Carmichael, Ann G. (1993): „Leprosy“. In: *The Cambridge World History of Human Disease*. Edited by Kenneth F. Kiple. Cambridge: Cambridge University Press, 834–839.
- Carter, M. G. (1990): “Arabic Lexicography”. In: *Religion, Learning and Science in the 'Abbasid Period*. Edited by M. J. L. Young, J. D. Latham and R. B. Serjeant (The Cambridge History of Arabic Literature). Cambridge [etc.]: Cambridge University Press, 106–117.
- Carter, M.G. (2012): “Sībawayhi”. In: *Encyclopaedia of Islam, Second Edition*. Edited by P. Bearman, Th. Bianquis, C.E. Bosworth, E. Van Donzel and W.P. Heinrichs. 10.1163/1573-3912_islam_COM_1068 (27. 01. 2017).
- Dévényi, K. et al. (eds.) (1993–1994): *Proceedings of the Colloquium on Arabic Lexicology and Lexicography (C.A.L.L.), Budapest, 1-7 September 1993*. 2 vols. (The Arabist). Budapest: Eötvös Loránd University, Chair for Arabic Studies.
- Dietrich, Albert (1988): *Dioscurides triumphans: ein anonym arabischer Kommentar (Ende 12. Jahrh. n. Chr.) zur Materia medica*. (Abhandlungen der Akademie der Wissenschaften in Göttingen, Philologisch-Historische Klasse. Folge 3; Nr. 172-173). Göttingen: Vandenhoeck & Ruprecht.
- Dols, Michael W. (1979): “Leprosy in medieval Arabic medicine”. *Journal of the history of medicine and allied sciences* 34.3: 314–333.
- Dozy, Reinhart (1927): *Supplément aux dictionnaires arabes*. 2nd edition. Paris: Maisonneuve.
- Endress, Gerhard (ed.) (2006): *Organizing Knowledge: Encyclopaedic Activities in the Pre-Eighteenth Century Islamic World*. (Islamic philosophy, theology and science; vol. 61). Leiden: Brill.
- Evans, William Charles (2009): *Trease and Evans pharmacognosy*. 16th edition revised with the assistance of Daphne Evans. Edinburgh: Saunders/Elsevier.
- Goichon, A. M. (2012): “Ibn Sīnā”. In: *Encyclopaedia of Islam, Second Edition*. Edited by P. Bearman, Th. Bianquis, C.E. Bosworth, E. Van Donzel and W.P. Heinrichs. 10.1163/1573-3912_islam_COM_0342 (24. 10. 2016).
- Hamarneh, Sami K. (1962): “The Rise of Professional Pharmacy in Islam”. *Medical History* 6: 59–66.
- Ḥamidullāh, Muḥammad (ed.) (1973): *Le dictionnaire botanique d'Abū Ḥanīfa ad-Dīnawarī: Kitāb an-Nabāt, de s à y*. (Textes et traductions d'auteurs orientaux; 5). Caire: Institut Français d'Archéologie Orientale du Caire.
- Haywood, J. A. (1960): *Arabic Lexicography: its history and its place in the general history of lexicography*. Leiden: Brill.
- Hübner, Wolfgang (2006): “Pleiades”. In: *Brill's New Pauly, Antiquity volumes*. Edited by Hubert Cancik and Helmuth Schneider. 10.1163/1574-9347_bnp_e927860, (15. 08. 2017)
- Humbert, Geneviève (2012): “al-Sīrāfī”. In: *Encyclopaedia of Islam, Second Edition*. Edited by P. Bearman, Th. Bianquis, C.E. Bosworth, E. Van Donzel and W.P. Heinrichs. 10.1163/1573-3912_islam_COM_1090 (28. 01. 2017).

- Isaacs, Haskell D. (1990): "Arabic Medical Literature". In: *Religion, Learning and Science in the 'Abbasid Period*. Edited by M. J. L. Young, J. D. Latham and R. B. Serjeant. (The Cambridge History of Arabic Literature). Cambridge [etc.]: Cambridge University Press, 342–363.
- Käs, Fabian (ed.) (2012): *Die Risāla fī l-Khawāṣṣ des Ibn al-Jazzār: die arabische Vorlage des Albertus Magnus zugeschriebenen Traktats De mirabilibus mundi*. (Abhandlungen für die Kunde des Morgenlandes; Bd. 79). Wiesbaden: Harrassowitz Verlag.
- Kunitzsch, Paul, Ullmann, Manfred (1992): *Die Plejaden in den Vergleichen der arabischen Dichtung*. (Sitzungsberichte / Bayerische Akademie der Wissenschaften, Philosophisch-Historische Klasse; Jg. 1992, H. 4) (Beiträge zur Lexikographie des klassischen Arabisch; Nr. 9). München: Verlag der Bayerischen Akademie der Wissenschaften.
- Lewin, Bernhard (ed.) (1953): *The book of plants of 'Abū Ḥanīfa al-Dīnawarī: Part of the Alphabetical Section*. With an introduction, notes, indices and a vocabulary of selected words. Uppsala, Wiesbaden: Lundequist, Harrassowitz.
- Muhanna, Elias (2013): "Why was the fourteenth century a century of Arabic encyclopaedism?." In: *Encyclopaedism from Antiquity to the Renaissance*. Edited by Jason König and Greg Woolf. Cambridge: Cambridge University Press, 343–356.
- Nasrallah, Nawal (2007): *Annals of the caliphs' kitchens: Ibn Sayyār al-Warrāq's tenth-century Baghdadi cookbook*. English translation with introduction and glossary; Arabic text edited by Kaj Öhrnberg [et al.]. (Islamic history and civilization; vol. 70). Leiden: Brill.
- Naṣṣār, Ḥusain (1988): *al-Mu'jam al-'arabī: nash'atuhū wa-taṭawwuruhū*. 2 vols, 4th edition. Cairo: Dār Miṣr li-l-Ṭibā'a.
- Pellat, Ch. (2012): "al-Ḥārith b. Kalada". In: *Encyclopaedia of Islam, Second Edition*. Edited by P. Bearman, Th. Bianquis, C.E. Bosworth, E. Van Donzel and W.P. Heinrichs. 10.1163/1573-3912_islam_SIM_8600 (26. 01. 2017)
- Pormann, Peter E., Savage-Smith, Emilie (2007): *Medieval Islamic Medicine*. (The new Edinburgh Islamic surveys). Edinburgh: Edinburgh University Press.
- Porter, Roy (1997): *The Greatest Benefit to Mankind: a Medical History of Humanity*. London: Fontana Press.
- Rowson, E.K. (2012): "al-Th a'ālibī". In: *Encyclopaedia of Islam, Second Edition*. Edited by P. Bearman, Th. Bianquis, C.E. Bosworth, E. Van Donzel and W.P. Heinrichs. 10.1163/1573-3912_islam_SIM_7504 (24. 10. 2016).
- Savage-Smith, Emilie et al. (2012): "Ṭibb". In: *Encyclopaedia of Islam, Second Edition*. Edited by P. Bearman, Th. Bianquis, C.E. Bosworth, E. Van Donzel and W.P. Heinrichs. 10.1163/1573-3912_islam_COM_1216 (02. 01. 2017).
- Schneider, Wolfgang (1968–1975): *Lexikon zur Arzneimittelgeschichte: Sachwörterbuch zur Geschichte der pharmazeutischen Botanik, Chemie, Mineralogie, Pharmakologie, Zoologie*. 7 vols in 9 books. Frankfurt a.M.: Govi-Verlag.
- Sellheim, R. (2012): "al-Khalīl b. 'Aḥmad". In: *Encyclopaedia of Islam, Second Edition*. Edited by P. Bearman, Th. Bianquis, C.E. Bosworth, E. Van Donzel and W.P. Heinrichs. 10.1163/1573-3912_islam_SIM_4161 (25. 10. 2016)
- Sezgin, Fuat (1982): *Geschichte des arabischen Schrifttums*. Vol. VIII. (Veröffentlichungen des Institutes für Geschichte der Arabisch-Islamischen Wissenschaften). Frankfurt am Main: Institut für Geschichte der Arabisch-Islamischen Wissenschaften an der Johann Wolfgang Goethe-Universität.
- Silberberg, Bruno (1910): *Das Pflanzenbuch des Abū Ḥanīfa Aḥmed b. Dā'ūd ad-Dīnawarī: ein Beitrag zur Geschichte der Botanik bei den Arabern*. Strassburg: Trübner.

- Strenziok, G. (2012) : "Azd". In: *Encyclopaedia of Islam, Second Edition*. Edited by P. Bearman, Th. Bianquis, C.E. Bosworth, E. Van Donzel and W.P. Heinrichs. 10.1163/1573-3912_islam_SIM_0946 (24.10.2016)
- Ullmann, Manfred (1970): *Die Medizin im Islam*. (Handbuch der Orientalistik. Abt. 1, Der Nahe und Mittlere Osten, Ergänzungsband 6, Abschnitt 1). Leiden: E. J. Brill.
- Weisser, Ursula (1983): *Zeugung, Vererbung und pränatale Entwicklung in der Medizin des arabisch-islamischen Mittelalters*. Erlangen: Hannelore Lüling.
- Wild, Stefan (1965): *Das Kitāb al-'Ain und die arabische Lexikographie*. Wiesbaden: Otto Harrassowitz.
- Yano, Michio (2013): "al-Bīrūnī". In: *Encyclopaedia of Islam, Third Edition*. Edited by Kate Fleet, Gudrun Krämer, Denis Matringe, John Nawas and Everett Rowson. 10.1163/1573-3912_ei3_COM_25350 (24. 10. 2016)