The Pearls Regarding What is Necessary for a Hospital Administrator by ʻAbd Al-Wāḥid Al-Maghribī: English Translation, Analysis and Introduction

by

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Table of Contents

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System of Transliteration:

ا	ā
ء	ʾ
ب	b
ت	t
ث	th
ج	j
ح	ḥ
خ	kh, kh
د	d
ذ	dh
ر	r
ز	z
س	s
ش	sh
ص	ṣ
ض	ḍ
ط	ṭ
ظ	ẓ
ع	ʿ
غ	gh
ف	f
ق	q
ك	k
ل	l
م	m
ن	n
ه	h
ة	a, at
و	w, ū
ي	y, ī
ى	y, ā
لا	lā
ال	al

I have applied this system consistently throughout the text, the only exception is citations and references where I have often adopted the transliteration of library catalogues.

Introduction

Franz Rosenthal, a scholar of Arabic literature and Islam, states that "the noblest expression of the deep concern of medieval Muslim society with matters of public health was a highly developed hospital system." [1] These magnificent and magnanimous institutions (*Bīmāristān*, pl. *Bīmāristānāt*) emerged in the late eighth or ninth centuries, and were continuations of East Syrian Christian and Byzantine health institutions.[2] At the same time, Islamic hospitals were exceptionally revolutionary in their own right, establishing secular medical foundations with highly specialized compartments, educational components, and an intricate hierarchy.[3]

Unlike their Christian counterparts, *Bīmāristāns* were independent institutions and for the most part free of overarching control by religious figures,

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[1] Franz Rosenthal,"The Fielding H. Garrison Lecture: The Physician in the Medieval Muslim Society," *BHM* 52 (Winter 1978): 490.

[2] The East Syrian Church originated in Asia Minor and Syria after the condemnation of the Bishop of Constantinople, Nestorius (381-451), as a heretic for questioning Mary's status as Mother of God. Nestorius and his followers were exiled and settled in Edessa, and later conflicts in Edessa prompted the Nestorians to move further east, settling in the Sasanian Empire in 457 A.D, where they played a large role in the translation of Greek texts to Syriac. The traditional view on the origins of the Islamic hospital claims that it was the medical school and hospital established by East Syrian Christians in Jūndī-Shāpūr that ultimately served as the model for the first Islamic hospitals in Baghdad. However, Michael Dols has sought to challenge this narrative by highlighting the role that Byzantine health institutions had in influencing East Syrian Christian health institutions and Islamic health institutions. See Michael Dols, "The Origins of the Islamic Hospital," *Bull. Hist. Medicine* 61(Fall 1987): 367-381. For more on Byzantine hospitals, see Timothy S Miller, "Byzantine Hospitals." *Dumbarton Oaks Papers* 38, (Symposium on Byzantine Medicine 1984): 53-63. For more on East Syrian Church, see "Nestorian," *Encyclopædia Britannica* (Encyclopædia Britannica Online, 2008). Accessed 1-21-2008. <http://www.britannica.com/eb/article-9055340>.

[3] See Dols, "Origins," 367-390. Mais Kataya, "History of Medical Treatments in the Bimaristans of Syria," Masters Thesis, Institute for the History of Arabic Science(University of Aleppo, Syria), 2006. See M. M. Levey, "Medieval Muslim Hospitals: Administration and Procedures," *Journal of the Albert Einstein Medical Center*, 100(1962): 120-127. Sh. Inayatullah, "Contribution to the Historical Study of Hospitals in Medieval Islam," *Islamic Culture* 18 (1944): 9. Maurice Atiyeh, "Arab Hospitals in History," *King Faisal Specialist Medical Journal* 2 (No.2, 1992): *121-126.* S. K. Hamarneh and M. A. Anees, *Health sciences in early Islam: collected papers*(San Antonio: Zahra Publications, 1983). Fazlur Rahman, *Health and Medicine in the Islamic Tradition: Change and Identity*(United States: ABG Group International, 1998*): 66-80.*

which made them more suitable for medical education, training, and growth.[4] Physicians were often consulted in the planning and construction of these facilities,[5] and in some hospitals each separate ward was carefully built to create an environment believed to help combat specific diseases.[6] The pre-Ottoman hospitals (established 800A.D.-1300A.D.), in Greater Syria and Egypt, generally consisted of four *iwans*[7] that converged on a central courtyard with a rectangular pool. One of the *iwans*, usually the largest, functioned as a lecture hall.[8] The hospital included rooms for patients that were divided into surgical, ophthalmologic, and general wards, with designated areas for patients with diarrhea, fevers, and those suffering from colds. The larger and more lavish hospitals also provided outpatient services that often assisted up to as many as 200 patients. [9] This explains why many hospitals had pharmacies with windows opening to the street.[10] Other halls included a separate section for female patients,[11] and special wards for the mentally ill.[12] There were also living quarters for the staff, storerooms, libraries, and kitchens, and some hospitals even had mortuaries and attached graveyards.[13]

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[4] Dols, "Origins," 387-388.
[5] See the example of Bīmāristān al- 'Aḍudī in M. M. Levey, op. cit., 122.
[6] See the example of Qalawun Hospital in Yasser Tabba , "The Functional Aspects of Medieval Islamic Hospitals," in *Poverty and Charity in Middle Eastern Contexts*, ed. Michael Bonner, Mine Ener, and Amy Singer(Albany, NY: State University of New York Press, 2003): 109.
[7] An *iwan* is a hall or space that is walled on three sides.
[8] Tabba , op. cit., 106.
[9] Adam Sabra, *Poverty and Charity in Medieval Islam* (New York: Cambridge University Press, 2000): 77.
[10] Tabba , op. cit., 106.
[11] It seems that the treatment of women was only a characteristic of the pre-ottoman hospitals in greater Syria and Egypt. See Miri Shefer, "Charity and Hospitality: Hospitals in the Ottoman Empire in the Early Modern Period," in *Poverty and Charity in Middle Eastern Contexts*, ed. Michael Bonner, Mine Ener, and Amy Singer(Albany, NY: State University of New York Press, 2003): 131.
[12] Dols, "Origins," 388. Also see M. Dols, "Insanity and its Treatment in Islamic Society," *Medical History* 31(1987): 1-14.
[13] Tabba , op. cit., 109. Peter Pormann and Emilie Savage-Smith, *Medieval Islamic Medicine*(United Kingdom: Edinburgh University Press, 2007): 100. Atiyeh, op. cit., 123.

The staff of the Islamic hospital consisted of chief physicians in each of the independent branches of medicine (physicians, ophthalmologists, surgeons), assistant physicians, medical students, pharmacists, nurses, cooks, and stewards.[14] The chief physician would make daily rounds on the sick, checking the work of assistant physicians, and quizzing medical students. [15] Physicians were asked to record patient information and prescriptions in charts, and nurses were responsible for carrying out the orders.[16] Some hospitals even required physicians to take turns rounding at night.[17] Medical lectures were usually given in the evening by the chief physician.[18]

The Islamic hospitals were built as symbols of princely patronage and were the largest acts of charity a ruler could undertake. Under the rubric of charitable institutions, they usually served the poor, the elderly, travelers, and the mentally ill: all members of society who could not be cared for by their families.[19] In this respect, hospitalization "signaled the absence or the dysfunction of a family." [20]

Broadly speaking, when patients came to the hospital, they were initially examined in an examination room. If they were not seriously ill, they were given medicine and sent home. If they were seriously ill, they were admitted, bathed, and given new clothes. If patients happened to get better, they were given new clothes and

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[14] For general descriptions of hospital function see Atiyeh, op. cit., *121-126.* Pormann and Savage-Smith, op. cit., 96-101. A note should be made that these descriptions lump characteristics of all the different hospitals together, and that some qualities upon deeper research can only be found in one or two hospitals.

[15] See the example of the Nūrī hospital, Levey, op. cit., 122. Rahman, op. cit., 68. Ahmad Isa, *Tā'rīkh al-Bīmāristānāt fi al-'Islām(*Damascus: al-Matba'at al Hashimiyah, 1939):208. G Leiser, "Medical Education in Islamic Lands from the Seventh to the Fourteenth Century," *Journal of the History of Medicine and Allied Sciences* 38(no. 1, 1983): 48-75.

[16] Ibid. For evidence of this in the Mānṣūrī hospital see Isa, *Tā'rīkh,* 78-80.

[17] This took place at the Manṣūrī Hospital in Cairo, see Sabra, op. cit., 78.

[18] For evidence of this in the Nūrī hospital see Levey, op. cit., 122. See Isa, *Tā'rīkh*, 208. For evidence of this is the Manṣūrī hospital,l see Isa, op. cit., 78-80.

[19] Dols, "Origins," 367-390.

[20] Shefer, "Hospitals," 127.

a stipend upon discharge, based on the belief that a patient should not stress over his provisions during the recovery period. If they passed away, their burial fees were paid for. [21] Despite all of this, one must agree with Dols that the most revolutionary aspect of the Islamic hospital was its unparalleled care for the mentally ill, and its treatment of insanity as a somatic disease.[22]

Similar to other charitable institutions, hospitals were founded and financially supported through endowments (*waqfs).* These endowments could consist of various types of revenue-producing properties such as shops, mills, plots of farm land, markets, and caravanserais. [23] The longevity of the institution depended on the strength of its initial endowment (i.e. whether it could produce ongoing revenue), the administrative system of the hospital, and the legacy of the institution.[24] The administrator (*nāẓir* or *wālī*) of the hospital, who was usually a judge or political figure, oversaw the management of the hospital. Some incorporated very complicated and advanced administrative systems that provided very strict control over the expenses and made embezzlement difficult, contributing to the long life of the institution.[25]

While the establishment of hospitals began in the Abbasid capital of Baghdad, it really evolved as a key component of the Islamic city in the 12th century under Saljūq

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[21] For evidence of this in the Nūrī hospital, see Rahman, op. cit., 68. For evidence of this in the Manṣūrī Hospital, see Isa, *Tā'rīkh,* 78-80.

[22] "There is no evidence that the care of the insane was a regular function of the Christian *Xenon or Nosokomeion* in either Byzantium or its equivalent in the East," see Dols, "Origins," 388; Dols, "Insanity in Byzantine and Islamic Medicine," *Dumbarton Oaks Papers* 38(Symposium on Byzantine Medicine 1984): 135-148; Dols, *Medieval Islamic Medicine* (Berkeley: University of California Press, 1984); Dols, "Insanity and its Treatment in Islamic Society," *Medical History* 31(1987): 1-14.

[23] Pormann and Savage-Smith, op. cit., 96.

[24] I believe that this helped hospitals survive waves of political change because new regimes usually supported well known charitable and educational facilities to help acquire legitimacy in newly conquered cities.

[25] Sabra, op. cit., 79-80.

and Ayyubid rule,[26] and by the 14th century there were approximately sixty hospitals in the Islamic world.[27] Some of the longest lasting hospitals included the *Nūrī* Hospital of Damascus and the *Manṣūrī* hospital of Cairo. *Bīmāristān al-Manṣūrī* was established in 1284 A.D. in Cairo and was in operation for six hundred years, until the mid-19th century.[28] The *Nūrī* hospital established in 1156 A.D., operated until 1899 A.D., at which time it still employed twenty doctors and pharmacists.[29]

Lastly, as was mentioned earlier, in addition to serving the needs of the poor, hospitals also functioned as centers of medical education and training, where medical practice and treatment may have been standardized.[30] They also played a role in wider public health efforts, and in setting perceptions and regulations about disease, even though exact details and the extent of this role has yet to be clarified.[31]

While this fascinating research on the Islamic hospital is to be commended,[32] the field still suffers from historiographical oversights and content gaps, a few of which

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[26] The Saljāqs were a ruling military family of Turkmen tribes that founded an empire that encompassed Mesopotamia, Syria, Palestine, and most of Iran in 11th century. The dynasty slowly disintegrated in the late twelfth century and died out early in the 13th century. The Ayyubid dynasty, was founded by Saladin (Salāḥ al-Dīn), and ruled over Egypt, most of Syria, and later upper Iraq and Yemen throughout the late 12th and early 13th centuries. Both the Saljūq and Ayyubid dynasties were known for building and establishing many colleges, mosques and hospitals. See "Ayyubid Dynasty," *Encyclopædia Britannica*(Encyclopædia Britannica Online, 2008). Accessed 1-25-2008. <http://www.britannica.com/eb/article-9011523>; "Seljuq," *Encyclopædia Britannica*(Encyclopædia Britannica Online, 2008). Accessed 1-24-2008. <http://www.britannica.com/eb/article-9066688>.

[27] Peregrine Horden, "The Earliest Hospitals in Byzantium, Western Europe, and Islam," *Journal of Interdisciplinary History* 25 (Winter, 2005): 361-389; Tabba, op. cit., 99-100.

[28] The hospital however appears to have fallen into decline in the late eighteenth century, as it cared for fifty mentally ill patients, and had no working physicians. For the later life of the hospital, see Isa, *Tā'rīkh,* 163-166.

[29] Ibid., 214.

[30] Pormann and Savage-Smith, op. cit., 100-101.

[31] See p. 34-52 later in the introduction.

[32] Despite the facts just presented, the Islamic hospital has been explicitly ignored in wider historical works on the development of hospitals. For example, see Guenter B. Risse's gargantuan work on the history of hospitals speaks of the Islamic hospital in three pages out of 289 pages on the pre-modern hospital, despite the acknowledgment of the sophistication of Islamic hospitals in respect to other developments at the time. *The Hospital in History,* edited by Lindsay Granshaw and Roy Porter, includes chapters only on European hospitals, which would be acceptable if the title was *The Hospital in European*

will be elaborated upon here.[33] Most significant, historians of the Islamic hospitals have largely recycled the primary sources that Ahmed Isa alludes to in his *Tārīkh al-Bīmāristān.*[34] These sources share two important characteristics.

The first is that, in their majority, they pre-date the 14th century. The result is that the 15th, 16th, and early 17th centuries are understudied, not only when it comes to the history of the Arabic hospital, but of Arabic medicine as a whole. Even the exhaustive history of the famous Manṣūrī hospital by Isa fails to detail any history of the hospital in the 15th, 16th, and 17th centuries. One of the reasons for the dearth of research on the Islamic hospital during this time has to do with the fact that this period is judged as a period of decline, tumbling far below the achievements and standards of Arabic medicine during the "Golden Age" of Islamic civilization (dated to be around the 11th century). The methodological mistakes that are the result of this belief will be elaborated at the end of the introduction.

In addition to this period gap, literature on Islamic hospitals also suffers from content gaps that arise from the fact that the majority of sources are historical and travel accounts, or foundation documents. Hence, while the structure, organization, operation, funding, and hierarchy of the Islamic hospitals has been investigated, I have

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History. Reading Granshaw's introduction one would get the false conception that hospitals arose and existed only in the West. See Lindsay Granshaw and Roy Porter(eds.), *The Hospital in History,(* New York: Routledge, 1989). Guenter B Risse, *Mending bodies, Saving souls : a history of hospitals,* (New York: Oxford University Press, 1999).

[33] No work has been written on the historiography of the Islamic hospital; however, much of Horden's comments on the historiography of the European medieval hospitals are very applicable to the history of Islamic hospitals. See Peregrine Horden ,"A Discipline of Revelence: The Historiography of the Later Medieval Hospital," *Social History of Medicine* 1, no. 3(1988): 359-375.

[34] The major sources of Isa's studies are the travel accounts of Ibn Jubayr (1145-1217 A.D.), Ibn 'Abi 'Uṣaybi'a's (1203-1270 A.D.) *'Uyūn al- 'Anbā' fī Ṭabaqāt al-'aṭibbā'* (Information on the Classes of Physicians), Ibn al Qiftī's(d. 1248 A.D.) *Tā'rīkh al Ḥukamā'*(History of Learned Men), Ibn Nadīm's (d. 998 A.D.) *Kitāb al-Fihrist, and* Al-Maqrīzī's (d. 1442 A.H) history. The exception to this is Miri Shefer's work on the Ottoman hospitals which is entirely original in the sources it explores. See Shefer , " Hospitals." Also see Miri Shefer, "Physicians in Mamluk and Ottoman courts," in *Mamluks an Ottomans,* ed. David Wasserstein and Ami Ayalon (New York: Routledge, 2006).

yet to come across a study that has addressed questions on the diseases and ethical dilemmas that hospitals dealt with. What diseases did hospitals treat? How did treatment and medical beliefs inside hospital walls differ from those of the wider medical community? Did hospitals in different geographic regions differ in their treatment of disease? What kind of approach to medicine (theoretical or empirical) was emphasized within the walls of these hospitals?

The reason for this may be that rarely is information about hospitals solicited from works written by actual physicians who worked in them. For example, while we know that physicians such as al-Rāzī and al-Kaskarī mention cases encountered in hospitals,[35] there has been no study to compare the diseases they treated within hospitals to the diseases they treated while making house calls. This would tell us a great deal about not only what diseases hospitals treated, but may perhaps also provide some evidence on the disparities between diseases of the poor (who were treated in hospitals) and those of elite classes (represented by house or palace visits).

In addition, there are many extant manuscripts that may convey to us information on hospital pharmacology and treatment, such as *Maqāla Amīniyya fī al-Adwiya al-Bīmāristāniyya* (*The Trustworthy Treatise on Hospital Drugs*) written by Ibn al-Ṭilmīdh (1165A.D.), *Dastūr al-Bīmāristān* (*The Hospital Formulary*) by Ibn Abī al-Bayyān (d. 1233 A.D.), and *Dastūr al-Bīmāristān*(*The Hospital Formulary*) written by Ibn Al-Qawṣūnī (fl. 1520-1574).[36] All three of these works speak of the drugs that were used in hospitals.[37]

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[35] Pormann and Savage-Smith, op. cit., 96.

[36] For more information on this manuscript please see Ramazan Sesen, Cemil Akpinar, and Cevad Izgi, *Catalogue of Islamic medical manuscripts (in Arabic, Turkish & Persian) in the libraries of Turkey*, (Istānbūl: Markaz al-Abḥāth lil-Tārīkh wa-al-Funūn wa-al-Thaqāfah al-Islāmīyah, 1984): p. 319.

[37] See D.M. Dunlop, "Bīmāristān," *Encyclopedia of Islam*, 1999. An edited version of *Dastūr al-Bīmāristān* (*The Hospital Formulary*) by ibn Abi al-Bayyān(d. 1233 A.D.) exits. See Abū al-Faḍl Dāwūd ibn Sulaymān Ibn Abī

These works could shed some light on treatment in hospitals, the diseases being treated in hospitals, whether treatment differed according to region, and whether it was driven by an empirical or theoretical approach to medicine.

Herein lays the value of *The Pearls Regarding What is Necessary for a Hospital Administrator,* by the physician 'Abd Al-Wāḥid Al-Maghribī. It is a sixteenth century text that provides us with information about hospitals during a period when Arabic medicine was believed to be deteriorating. The work does not give precise details on the regulations and management of disease in hospitals, but it does provide insight into the medical and ethical dilemmas that hospitals faced, the diseases that hospitals were forced to tackle, the hospital attitude towards contagion, and a couple of hospital case histories.

The Text

The Pearls Regarding What is Necessary for a Hospital Administrator by al-Shaykh 'Abd Al-Wāḥid Al-Maghribī is a succinct treatise that appears to be written as a guide for the hospital administrator of Bīmārisatān al-Manṣūrī, Ḥusayn bin Muḥammad.[38] It attempts to address two medical dilemmas that were of concern to physicians and hospitals in the 16th century: contagious diseases and incurable diseases. The treatise is divided into three parts.

Part one has two chapters. The first chapter deals with medical ethics, basically reminding doctors of the importance of identifying when diseases are

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al-Bayān, "al-Dustūr al-bīmāristānī: Le formulaire des hôpitaux d'Ibn Abil Bayan, médecin du Bimaristan Annacery au Caire," *Bulletin de l'Institut d'Egypte* 15, (1932-1933): 13-78. For more information on al-*Maqāla Amīniyya fī al-Adwiya al-Bīmāristāniyya* see A. Z. Iskandar, *A Catalogue of Arabic Manuscripts on Medicine and Science in the Wellcome Historical Medical Library* (London: Wellcome Historical Medical Library, 1967): 113.

[38] Unfortunately, I have been unable to find more information on Ḥusayn bin Muḥammad.

incurable. In Abd Al-Wāḥid's eyes, treating incurable diseases only squanders time, effort, and resources, and more importantly damages the trust that the public has in the physician and the greater medical community (for claiming he can treat the disease).

The second chapter deals with contagious and heritable diseases. 'Abd Al-Wāḥid Al-Maghribī does not delve into theoretical discussion on contagion but only lists the diseases that are contagious. Contagious diseases may be curable, but one should be careful to treat such patients in the hospital for fear of spreading the infection. The mechanism by which these diseases are spread is not elaborated upon and his goal appears to be to formulate an approved hospital list of contagious diseases, perhaps in the hope of letting the hospital staff know that such diseases necessitate special rules and circumstances.

The contagious diseases include leprosy, divine fever, scabies, consumption, ophthalmia (conjunctivitis/trachoma), and syphilis. Diseases such as pneumonia, pleurisy, smallpox, and measles are spoken of later in the manuscript, but are not mentioned as transmissible or contagious diseases. Unfortunately, with the exception of his brief paragraph on syphilis, he does not mention any information on the management or the symptoms of contagious disease.

Regarding heritable diseases, they are usually chronic conditions and the physician "should not attempt to cure the root of the disease, but rather to control its symptoms, and prevent its harms." In this chapter, the author also writes two paragraphs on the harmful and humoral aspects of coffee, a new substance that was introduced into Egypt in the early sixteenth century.

Part Two is on the incurable diseases arranged by the organ systems from head to foot, divided into ten chapters. Part Three covers incurable diseases that are not specific to any particular organ. In this respect, the treatise is organized according to the general divisions created by Avicenna, with a major distinction being made between diseases specific to one body part and those not specific to any body part.[39] Since the work is written as a guide to hospitalists, the author concentrates on identifying diseases by their symptoms, rather than describing their humoral etiologies. His main concern is to help physicians use the symptoms of a disease in order to know when a disease has reached a point where it can no longer be cured. 'Abd Al-Wāḥid depicts a realistic and sober picture of medicine during the late Middle Ages. Not only does he list a plethora of diseases that physicians could do absolutely nothing about, but also suggests that many chronic and serious conditions were the result of untreated diseases, indicating society's inability to tackle manageable diseases.

The treatise is filled with seven case histories: a prince suffering from gum disease who loses faith in medicine when his doctors can not cure him[40]; a young man from Upper Egypt who presents to the hospital with a wretched cough[41]; a prince who dies from severe diarrhea[42]; a relative of Shaykh Zayn al-Marṣafī (d. 966 A.H./1559 A.D)[43] who presents to the hospital with tachycardia[44]; a women from the circle of the Arabic

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[39] Pormann and Savage-Smith, op. cit., 56.
[40] See edited text and translation, p. 98.
[41] Ibid. 103.
[42] Ibid. 110.
[43] Muḥammad bin Muḥammad(Ahmad) Zayn Al-'ābdīn al-'Ash'arī al-Ghumarī, also known as Basīṭ(Sabiṭ) al-Marṣafī, was a Egyptian Sufī Shaykh and Shāf'ī jurist. He wrote many books. See Kaḥḥālah, op cit., v. 11, 257. Also See Ziriklī, op. cit., v. 7, 58. See also his work Muḥammad ibn Muḥammad Marṣafī, *Dā'ī al-falāḥ ilá subul al-najāḥ*, Taḥqīq Muḥammad 'Abbās Ḥilmī (Al-Qāhirah : Wizārat al-Awqāf, al-Majlis al-A'lá lil-Shu'ūn al-Islāmīyah, Markaz al-Sīrah wa-al-Sunnah, 2001): 8.
[44] See edited text and translation, p. 105.

scholar Shaykh 'Uthmān al-Mālikī (d. 1009 A.H./1600A.D)[45] who is suffering from gangrene[46]; a man from Sinān Pāshā's[47] men who dies from ascities and diarrhea.[48]

With the exception of the chapter on contagious diseases, which does not contain any references to other texts, the rest of the work is filled with many quotations from other scholars including Hippocrates (fl. 400 B.C.), Galen (d. 200 A.D.), al-Razi (d. 925 A.D.), al-Majūsī (fl. 949-982 A.D.), Al-Zahrāwī (d. 1013 A.D.), Ibn Sīnā(d. 1037 A.D.), al- Īlāqī (d. 1141 A.D.), Ibn Zuhr (d. 1161 A.D.), al-Samarqandī (d. 1222 A.D.), Ibn-Nafīs (d. 1288 A.D.), al-Kāzarūnī (d. 1357 A.D.), The scholars he references are from throughout the Islamic world, which demonstrates his erudition. Interestingly, all of them precede the author by at least two centuries, and he does not make any direct references to contemporary physicians or recent works, except for perhaps, once, of his contemporary Taqī al-Dīn (d. 1585) who was more of an astronomer than a physician.[49]

The author makes the most references to Hippocrates (eighteen times), followed by references to Ibn Zuhr (eight times), al-Samarqandī (seven times), al-Majūsī (six times) and ibn-Nafīs (five times). What is interesting is that our author obviously

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[45] The person mentioned by our author is most likely 'Uthmān bin Alī bin Muḥammad bin Muḥammad al-Ghazzī al-Mālakī(d. 1009 A.H./1600 A.D.). He was born in Egypt and died there. He was scholar in Arabic. He has also produced many works. See Kaḥḥālah, op. cit., v. 6, 264.

[46] See edited text and translation, p. 117.

[47] Sinān Pāshā ibn 'Ali ibn 'Abd al-Raḥman was of Albanian origin, born around 1520 A.D. Sinān Pāshā was wālī of Egypt in 925A.H. (1568A.D.) for nine months, and then again on 1 Safar 979 A.H. (June 25, 1571 A.D.), he was governor for one year and ten months, until Dhu'l Hijja 981 A.H. (April 1573 A.D.). See M. Tarek Swelim, "An Interpretation of the Mosque of Sinan Pasha in Cairo," *Muqarnas* 10(1993): 98-99. See also Christine Woodhead and Fr. Babinger, "Sinān Pasha, Khodja," *Encyclopaedia of Islam*, edited by P. Bearman et al (Brill Online, 2008). Accessed 1-26-2008. <http://www.brillonline.nl/subscriber/entry?entry=islam_COM-1082>

[48] See edited test and translation, p. 107.

[49] Unfortunately, the text is unclear, and one can not be certain that it is in fact a reference to Taqī al-Dīn. Please see p. 114 of the edited text. Taqī al-Dīn Muḥammad ibn Ma'rūf (died in1585/993) was an important astronomer in Istanbul, who was responsible for the Ottoman Sultan Murad III building an observatory in 1579/987. He composed treatises on various astronomical instruments, mechanical clocks, and at least one medical work. See Emily Savage-Smith, Bibliographies," *Islamic Medical Manuscripts at the National Library of Medicine*. Accessed 1-21-2008. < http://www.nlm.nih.gov/hmd/arabic/bioT.html#taqi>

favored Hippocrates over Galen, despite the fact that in medieval Islamic medical learning, "the works of Hippocrates were second to Galen."[50] Considering the work's clinical orientation, the practical writings of Hippocrates were likely more useful than the theoretical musings of Galen.

The Manuscript

After surveying many Arabic manuscript catalogues,[51] there appears to be only one copy of *The Pearls Regarding What is Necessary for a Hospital Administrator* by al-Shaykh Abd Al-Wāḥid Al-Maghribī. It is located in the Suleymaniye Library in Istanbul.[52] In addition to the catalogue by Sesen et al., information about the treatise can be found in the works of Brockelmann and Kaḥḥālah,[53] who both cite Ḥajjī Khalīfa when speaking about the title. Ḥajjī Khalīfa (1599-1658 A.D.), who lived in the generation after our author, has written the following about it:

> *The Pearls Regarding What is Necessary for a Hospital Administrator* - by Shaykh 'Abd Al-Wāḥid Al-Maghribī. It starts out by saying "Praise due to the One who has shed insight, by his wisdom, on his loved ones...etc." He mentioned that the honorable Ḥusayn bin Muḥammad, administrator of the *Manṣūrī* Hospital, asked him to write a work containing the majority of diseases that

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[50] M. Dols, *Medieval Islamic Medicine* (Berkeley: University of California Press, 1984): 9.

[51] I have surveyed the following catalogues: Daud Chalabi, *Kitāb makhṭūṭat al-Mawsil,* (Baghdad: Matba'at al-farāt, 1927). Muḥammad As'ad Ṭalas, *Al-Kashāf 'an makhṭūtāt khazā'in kutb al-'aūqāf*(Baghdad: Matba'at al-'Ani, 1953). Yusuf Zaydan, *Fihris makhṭūṭat baladiyāt al-'Iskandariyah,* (Al Iskandariyah : al-Hayāt al-'Ammah li-Maktabāt al-Iskandariyah, 1996). Sami K Hamarneh, *Index of Arabic Manuscripts on Medicine and Pharmacy at the National Library of Cairo,*(Cairo : Dar al-Mahasin Press, 1967). Ibid, *Catalogue of Arabic Manuscripts on Medicine and Pharmacy at the British Library,* (Cairo : Les Editions universitaires d'Egypte, 1975). A. Z Iskandar, *A catalogue of Arabic manuscripts on medicine and science in the Wellcome Historical Medical Library,*(London: Wellcome Historical Medical Library, 1967). Ibid, *A descriptive list of Arabic Manuscripts on Medicine and Science at the University of California, Los Angeles,* (Lieden: E.J. Brill, 1984).

[52] The library is located in mosque complex of Sulaymān. See Ramazan Sesen, Cemil Akpinar, and Cevad Izgi, *Catalogue of Islamic medical manuscripts (in Arabic, Turkish & Persian) in the libraries of Turkey,* (Istānbūl: Markaz al-Abḥāth lil-Tārīkh wa-al-Funūn wa-al-Thaqāfah al-Islāmīyah, 1984): Author # 29, Manuscript # 2112/14.

[53] Carl Brockelmann, *Geschichte der arabischen litteratur,*(Leiden: E.J. Brill, 1943): S. II, p. 1028, no. 9. 'Umar Riḍā Kaḥḥālah, *Mu'jam al-mu'allifīn : tarājim muṣannifī al-kutub al-'Arabīyah,* (Dimashq : Yuṭlabu min al-Maktabah al-'Arabīyah, 1957-1961): V. 6, p. 213.

> have no cure, and the diseases that spread to more than two people. So he wrote it and organized it into parts and chapters.[54]

The text is one of 18 in a miscellany of medical treatises bound together in a single volume (MS. Number 2112), located in the Shahīd 'Alī Pasha[55] manuscript collection at the Suleymaniye Library in Istanbul. The treatises are beautifully written, and appear to be copied by the same scribe. It is written in Neskhi script and the dimensions are 14.7 x 20.4 cm. The cataloguers have not identified the scribe of the manuscripts, nor the date in which they were copied.[56]

I obtained a complete copy of the collection in order to try to discover the name of the scribe, and the date that it was copied. At the beginning of the manuscript are two pages of scribbled notes (See Image 1A), which differ from the script throughout the rest of the collection (See Image 1B). The notes are a fascinating interview and short autobiography of the famous 16th century physician Dā'ūd ibn 'Umar al-Antākī (d. 1599/1008 A.H),[57] narrated by his student al-Ṭālawī, and recorded by the scribe Khayr Allāh Muḥammad 'Uthmān bin Sufyān Murādkhān. The passage is very similar to a passage about Antākī in al-Ṭālawī's work *Kitāb al-Sāniḥāt* (*The Book of Good Omens*). [58]

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[54] Ḥajjī Khalīfa = Kâtib Çelebi, *Kitāb kashf al ẓunūn 'an asāmī al-kutub wa-al-funūn*,(Maarif Matbaasi 1941-43): pp 1150.

[55] 'Alī Pasha may refer to several Ottoman Empire figures: 'Alī Pasha (d. 1571), commander of the Turkish fleet in the Battle of Lepanto (1571), 'Alī Pasha (1741-1822), Ottoman governor of Rumelia, and Mehemed Emin Aali Pasha (1815-1871), an Ottoman diplomat.

[56] Sesen, op. cit.

[57] Al-Antākī who died in 1599 A.D., migrated to Damascus and then Egypt to practice medicine, just as our author seems to have done. If our author was in Cairo in 980 A.H.(1572 A.D.), as our manuscript indicated, it is quite possible that he met al-Antākī there.

[58] Al-Ṭālawī's full name is 'Abu al-Mu'ālā Darwīsh al-Ṭālawī(أبو المعالى درويش الطالوي). He died in 1014 A.H.(1606 A.D), and was born in 950 A.H. He was the Muftī of Damascus as well as a scholar of literature. His *Kitāb al-Sāniḥāt* is not published or edited, but it is quoted by 'Aḥmad 'Isa when he writes about

The scribbled note seems to indicate that the scribe of the collection may have been 'Uthmān bin Sufyān Murādkhān, about whom I have not found any information. Murādkhān could have been a student of al-Ṭālawī or his personal scribe, suggesting that al-Ṭālawī may have been orally transmitting the manuscripts to him. Either way, this indicates that the collection may have been written in the late 16th or early 17th century. It is also possible that Murādkhān copied the scribbled notes out of al-Ṭālawī's book and that the collection was written at a later date.

Image 1A: Two pages of scribbled notes located at the beginning of the manuscript which contain an interview with and short autobiography of the 16th century physician Dā'ūd ibn 'Umar al-Antākī (d. 1599/1008 A.H)

Image 1B: The first page of the treatise, The Pearls Regarding What is Necessary for a Hospital Administrator, by Shaykh 'Abd Al-Wāhid Al-Maghribī. The script here is identical to the script used in the other 17 treatises contained in the MS. Number 2112.

After this scribbled introduction, there is a page that lists the contents of the bound collection. It states that there are 18 treatises, but lists only 17 titles. It has a *waqf* stamp, explaining that the volume was endowed by the vizier Shahīd Alī Pāshā on the condition that it is not to be moved from its library (See Image 2A). The following is

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'Antākī. See Ahmad Isa, *Mu'jam al-Aṭibbā' : Min Sanat 650 H ilā Yawminā Hādhā,* (Miṣr : Maṭba'at Fatḥ 'Allāh 'Ilyās Nūrī, 1942). Also see Kaḥḥālah, op cited, vol 4. pp. 144. Also see Ziriklī, op. cited, v. 3 p. 15.

a list of the treatises in the collection in the exact order that they are arranged throughout the manuscript: [59]

1. *The Pleasure of the Intellect in the Restoration of the Body* (كتاب نزهة الأذهان في إصلاح الأبدان), by al-Antākī.
2. *A Treatise on Alternatives* by the doctor 'Abī Sa'ad al- 'Alāyi ibn Ibrāhīm al-Maghribī[60] (كتاب رسالة البدليات للطبيب المغربي أبي سعد العلاي ابن ابراهيم). It addresses various alternative drugs for certain diseases.
3. *Drug Alternatives* (كتاب البدليات في الأدوية), and the author is unknown.
4. *A Reminder of Some Drug Alternatives for Drugs that are Difficult to Attain* (كتاب تذكرة لبعض البدليات في الأدوية عند تعذر تحصيله). The author is unknown.
5. *An Explanation of the Simple Arabic Drugs* (كتاب تفسير الأدوية العربية المفردة), by "the skillful master" (الأستاذ الماهر). It is not clear who the skillful master is. It is a short treatise on the simple drugs a physician should posses in order to treat his patients.
6. *The Categorized Didactic Poem of Ibn Sina* (منظومة ابن سينا الفصولية).
7. *The Hospital Formulary* by Ibn Al-Qawṣūnī[61] (دستور البيمارستان للعلامة ابن القوصوني).
8. *A Treatise on the Disease Known as Tetter (Ringworm)*, by Ibn Al-Qawṣūnī (رسالة في العلة المعروفة بالقوفا (القوباء) للشيخ العلامة ابن محمد القوصوني).
9. *A Treatise on the Curing of Pain with the Art of Phlebotomy and Cupping* by the 'Imām al-Ra'īs 'Abu 'Alī[62] (رسالة شفاء الآلام في صناعة الفصاد والحجام جمعها الإمام الرئيس أبو علي).
10. *A Treatise on the Use of Simple Drugs in Any Time or Place, What Corrupts Them, and on What to Store Them In* (رسالة في اتخاذ الأدوية المفردة في أي زمان ومكان وما يفسدها وفي أي شيء تخزّن). The author is not mentioned.
11. *A Pleasant Treatise* by Al-Shaykh 'Abū Naṣīr 'Adnān[63] (رسالة لطيفة للشيخ أبو نصر عدنان). The treatise speaks on the creation of vapor and herbs and their relationship to astrology.

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[59] It is worth mentioning that the Turkish catalogue (See Sesen, op. cit.) does not list all the works in the collection. This is an indication of the difficulty of cataloguing manuscripts, and begs the question of how many Arabic manuscripts are still not catalogued.

[60] Ibrāhīm ibn Abī Sa'īd ibn Ibrāhīm al-'Alā'ī al-Maghribī lived in the mid 12th century. He "wrote a treatise on medicinal substances apparently composed for Dhu al-Qarnayn ibn Isma'il Danishmendid, a ruler in Anatolia (in Malatya and Elbistan) from 1152 to 1162 A.D. (547- 557 A.H.)." Emily Savage Smith, "Bibliographies," *Islamic Medical Manuscripts at the National Library of Medicine*. Accessed 9/27/2007. <http://www.nlm.nih.gov/hmd/arabic/bio1.html>

[61] Muḥammad ibn Muḥammad al-Qawṣūnī (fl. 1520-1574 A.D.). "The Ottoman physician Muḥammad ibn Muḥammad al-Qawṣūnī was court physician to Sultan Sulaymān I, who ruled from 1520 to 1566, and Selim II, who ruled from 1566 to 1574." Emily Savage Smith, "Bibliographies." Accessed 9/27/2007. <http://www.nlm.nih.gov/hmd/arabic/bioQ.html>

[62] A nickname commonly given to Avicenna.

63 'Ayn-zarbī, Abū Naṣr 'Adnān ibn Naṣr (d. 1153/548 H). " 'Adnān al-'Ayn-zarbī was court physician to the Fatimid ruler in Egypt, al-Zāfir, who governed from 1149 to 1154 (544-549 H). He worked as both an astrologer/astronomer and a physician. " Emily Savage Smith, "Bibliographies." Accessed 9/27/2007. <http://www.nlm.nih.gov/hmd/arabic/bioA.html>

12. *A Treatise on the Levels of Compound Medications Composed of the Four Humors* (رسالة في درجات الادوية إذا كانت مركبة من أربع طباع). The author is not mentioned.
13. *A Treatise on the Characteristics of Beautiful Women* (رسالة في أوصاف النساء الحسان). The author is not mentioned.
14. There is a one page chapter on acute and chronic ulcers that is not mentioned in the contents page nor titled. The author is unknown. It appears that it might be by the same author who wrote the treatise on women.
15. *Hippocrates's Signs that indicate Death* (رسالة في العلامات التي يستدل بها على أحوال الموت لأبقراط).
16. *The Pearls Regarding What is Necessary for a Hospital Administrator* by al-Shaykh Abd Al-Wāḥid Al-Maghribī (عقود الجمان فيما يلزم من ولي البيمارستان للشيخ عبد الواحد المغربي).
17. *Book on the Preservation of Health* by ibn 'Abd al-Salām al-'Aqīlī al-Tūnisī [64] (كتاب في حفظ الصحة لابن عبد السلام العقيلي التونسي). Half of the manuscript is missing.
18. *Curing the Poor with Cough Medicine* by al-Shaykh 'Abd al-Qādir al-Shādhilī[65] (شفاء المتعال بأدوية السعال للشيخ عبد القادر الشاذلي). This treatise is mentioned on the contents page, but is missing from the manuscript.

The collection includes four texts authored in the 16th century; two of those authors were Shaykh 'Abd Al-Wāḥid Al-Maghribī's contemporaries: al- Antākī (d. 1599) and ibn al-Qawṣūnī(fl. 1520-1574). Their essays appear to be the most recent texts in the collection. All three physicians were considered among the most respected physicians of their time.

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[64] His last name is misspelled in the manuscript: Shihāb al-Dīn Abu al- 'Abbās 'Aḥmad bin 'Abd al-Salām al-Ṣaqalī (d. around 820 A.H., 1417 A.D.). See Sesen, op. cit., 279.

[65] 'Abd al-Qādir bin Muḥammad bin 'Aḥmad al-Shādhilī (d. 935 A.H, 1529 A.D.): A Shāfi'ī scholar, who lived in Egypt and was a student of al-Suyūṭī. See Sesen, op cit., 286. And Khayr al-Dīn al-Ziriklī, *A'lām*, (Bayrūt : Dār al-'Ilm lil-Malāyīn, 1979): v. 4, 43.

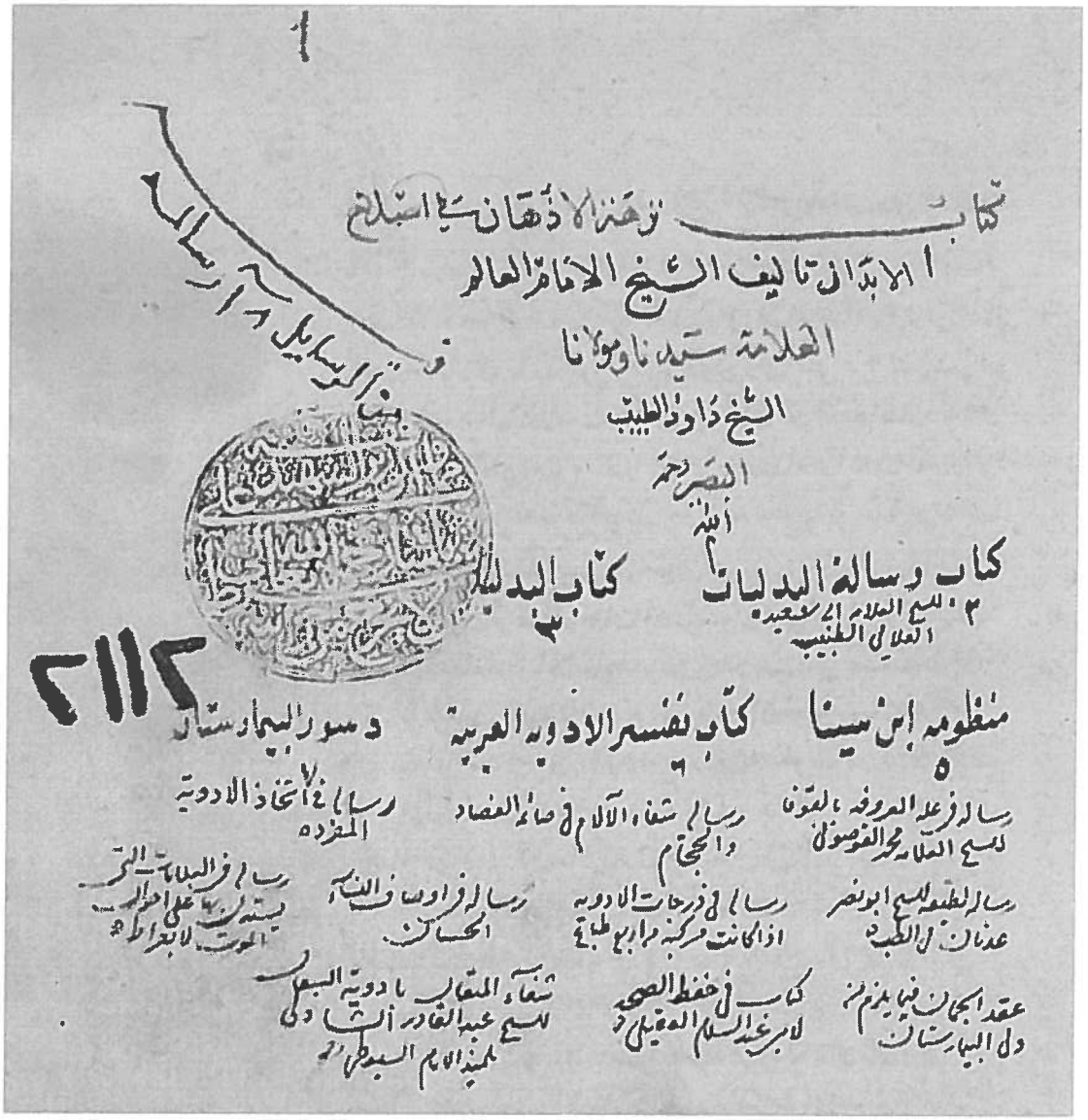

Image 2A: Table of contents in MS. Number 2112. Folio 2B.

The Edition and Translation

In the manuscript, vowels and punctuation are randomly used with no precise logic to their application. For example, the scribe uses the punctuation mark (ا ه) to mark the end of chapter, but only uses this punctuation mark once. The main punctuation mark is (انتهي), indicating the end of a paragraph. However, it is also only used sporadically. The *Hamza* is completely omitted, and sometimes replaced by the letter *waw* or *ya*. There are occasional misspelled words.

In my edition, I divided the text into paragraphs, adding the necessary punctuations, *Hamzas*, and vowels to make the text legible to the modern Arabic reader. I corrected all misspelled words, but cited the original spelling in the footnotes. There are certain words such as (ميؤوس), which the author consistently spells incorrectly (مايوس), and lead one to believe that the word may have been considered a canonical spelling at the time and place that the manuscript was written.

Additions to both the Arabic text and the English translations are marked by brackets [ ], while elaborations or alternatives on the meanings of a word or sentence are marked by parentheses (). In case of uncertain readings, the word has been placed in between the following symbol, †, and any possible alternative readings are footnoted.

In my translation, I have attempted to provide a readable and smooth text, while trying my best to convey the style of the Arabic text. All technical words have been translated with as much consistency as possible, and references for the translations are cited in the glossary. Depending on the context in which they are used,

certain technical words have more than one meaning, and I have also cited this in the glossary. I have attempted to footnote any possible discrepancies in the meanings of technical words. However, the very technical and evolving nature of medieval Arabic language, makes capturing all the discrepancies extremely difficult. One example is the word *Muzmin* (مزمن) which the author clearly uses with two different yet similar meanings. At times the word is used exactly as the word "chronic" is used in English medical terminology, but in certain situations the author uses *Muzmin* to designate a disease that has remained untreated and has thereby become chronic.

Lastly, I have footnoted any relevant comments concerning the content of the manuscript. However, most of the text is analyzed in the introduction.

The numerous quotations by several physician scholars made any attempt at identifying the exact quotations from their works an arduous task, especially considering the voluminous nature of many of the works that are cited. I have decided to forgo it here, even though the accuracy of his quotations is of extreme value in deciphering the exact scholastic nature of our physician, and the role played by memory in medical training and practice in 16th century medicine.[66]

The Author

Information about Shaykh 'Abd Al-Wāḥid Al-Maghribī (الشيخ عبد الواحد المغربي)[67] is scarce and sketchy. His full name is recorded as 'Abū Muḥammad 'Abd Al-Wāḥid bin

[66] If he is quoting from a book, it would indicate his access to books and libraries. However, if he is citing from memory, it reveals how much emphasis may have been given to memorizing medical "classics."
[67] This is the author's name as it is recorded in the manuscript and in Hajjī Khalīfa *Kashf al Ẓunūn.* See Çelebi, op cit.

Muḥammad bin ‘Abd Al-Wāḥid Al-Maghribī ibn al-Dalāj (أبو محمد عبد الواحد بن محمد بن عبد الواحد المغربي ابن الدلاج).[68]

His family originated from Andalusia.[69] We do not know when he was born, or if he was even born in Andalusia, but we do have evidence that he lived in Damascus, Syria and Cairo, Egypt.[70] It is unclear as to whether he migrated himself, or whether his family had migrated before his birth. Either way it appears that medicine may have been a family trade, as ‘Abd al-Wāhid bin ‘Abd ’Allah al-Maghrabī (d. 790 A.H./1388 A.D.), who may quite possibly have been our author’s great grandfather, is reported as being a very skillful physician.[71]

‘Abd Al-Wāḥid Al-Maghribī must have been quite an extraordinary doctor as he was perhaps the administrator and chief doctor of the prestigious Nūrī Hospital in Damascus.[72] Unfortunately, the exact years of his work there are unknown. However, we do know that he lived in Cairo in 980 A.H. (1573A.D.).[73]

Judging from the fact that he was endowed by the administrator, Ḥusayn bin Muḥammad[74], of the famous and celebrated *Manṣūrī* hospital in Cairo, to write *The Pearls Regarding What is Necessary for a Hospital Administrator*, he must have enjoyed the same prestige in Egypt as he had enjoyed in Damascus. His remarkable skills as

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[68] Sesen, op. cit. This name is also given by Brockelmann, Ṭalas, and Ziriklī See Brockelmann, op. cit. Ṭalas, op. cit., 216. Ziriklī, op. cit., v. 4, 177.

[69] See Kaḥḥālah, op. cit., v. 6, 213. Ziriklī, op. cit., v. 4, 177. Sesen, op cited. Ismā‘īl Bāshā Baghdādī, *Hadīyat al-‘ārifīn,* (Bayrūt, Lubnān : Dār al-Fikr, 1982): v.1, 636.

[70] For evidence of his stay in Damascus, see Kaḥḥālah, op. cit., and Baghdādi, op. cit. Evidence of his stay in Cairo is evident in our study of the text.

[71] ‘Abd al-Ḥayy ibn Aḥmad Ibn al-‘Imād (1623-1679), *Shadharāt al-dhahab fī akhbār man dhahab* (Dimashq ; Bayrūt : Dār Ibn Kathīr, 1986): v. 8, 557.

[72] Kaḥḥālah, op. cit., and Baghdādi, op. cit. I am doubtful if ‘Abd Al-Wāḥid Al-Maghribī was ever in Syria, please see the next few pages.

[73] It is unclear whether our author was in Damascus first or Cairo. Considering that he may have been one of Sinan Pasha’s doctors(see footnote 65), who was governor of Egypt in 1573 A.D., and then governor of Damascus in 1586-88, could it be possible that our physician was among a group of personal physicians that accompanied him? Swelim, “Sinan,” 98-99.

[74] I have not been able to locate any information on him so far.

physician and high reputation in society is illustrated in the fact that he was one of many doctors who convened over the treatment of one of Sinān Bāshā's men.[75] Sinān was the governor of Egypt at the time, and hence this was no ordinary group of doctors. Our author claims to have outdone them:

> This disease happened to a man of Sinān Bāshā in Egypt, the year 980 A.H. The doctors convened over him [to discuss his treatment] and they treated him with one of their treatments. I, however, had warned them of his death, three months prior, and what I predicted happened, may God have mercy on his soul. [76]

In his work, he narrates two stories about the ailments of the princes of Egypt. While it is unclear whether he attended over them, his accurate descriptions suggest he was in the immediate circle of the princes or the doctors attending to them:

> This disease happened to a prince in Egypt, the protected country, and he (the prince with his doctors) tired immensely in its treatment without experiencing any benefit, until the prince became a disbeliever in this profession [medicine]. This could had been avoided had he known that it was incurable.[77]

> This exact disease afflicted one of the princes of Egypt during the year of nine hundred and eighty. Every time the [diarrhea] subsided, it would return. It would not cease. He was in a prison of defecation, in extreme pain, and unable to sleep. This man used to relentlessly demand to drink cold water, and every time he drank it, the [diarrhea] increased, may God the Exalted have mercy on his soul.[78]

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[75] Sinān Pāshā ibn 'Ali ibn 'Abd al-Raḥman was of Albanian origin, born around 1520 A.D. Sinān Pāshā was wālī of Egypt in 925A.H. (1568A.D.) for nine months, and then again on 1 Safar 979 A.H. (June 25, 1571 A.D.), he was governor for one year and ten months, until Dhu'l Hijja 981 A.H. (April 1573 A.D.). See M. Tarek Swelim, "An Interpretation of the Mosque of Sinan Pasha in Cairo," *Muqarnas* 10(1993): 98-99. See also Christine Woodhead and Fr. Babinger, "Sinān Pasha, Khodja," *Encyclopaedia of Islam*, edited by P. Bearman et al (Brill Online, 2008). Accessed 1-26-2008. <http://www.brillonline.nl/subscriber/entry?entry=islam_COM-1082>

[76] See edited text and translation, p. 107.

[77] Ibid., 98

[78] Ibid., 110.

In addition, our author mentions treating the families of the Egyptian Shāfi'ī and Sufī scholar Shaykh Zayn al-Marṣafī (d. 966 A.H./1559 A.D)[79] and the Arabic scholar Shaykh 'Uthmān al-Mālikī (d. 1009 A.H./1600A.D).[80] Both men were prolific writers and belonged to the educated scholarly class of Cairo. We also know that, in addition to treating people from higher social classes, 'Abd Al-Wāḥid treated and tended to everyday people and people from the countryside in hospitals.

He also belonged to the *Mālikī* school of thought,[81] and has also been labeled as a *Masālikī*.[82] This word could imply many things ranging from the suggestion that he belonged to a spiritual group, was known as a traveler, or simply labeling him as professional. A careful reading of the manuscript suggests that our author was a traveler, or at least had quite some traveling experience. Such statements as "I have seen in most cities, how opposite/different [it is] from the custom of Egypt, may God protect it, and this is a disadvantageous custom [i.e. that they do not practice quarantine or that they practice quarantine differently],"[83] and his displayed knowledge about the climates in Yemen and Abyssinia, lead us to conclude that he did not live his whole life in Egypt.

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[79] Muḥammad bin Muḥammad(Ahmad) Zayn Al-'ābdīn al-'Ash'arī al-Ghumarī, also known as Basīṭ(Sabiṭ) al-Marṣafī, was a Egyptian Sufī Shaykh and Shāf'ī jurist. He wrote many books. See Kaḥḥālah, op cit., v. 11, 257. Also See Ziriklī, op. cit., v. 7, 58. See also his work Muḥammad ibn Muḥammad Marṣafī, *Dā'ī al-falāḥ ilá subul al-najāḥ*, Taḥqīq Muḥammad 'Abbās Ḥilmī (Al-Qāhirah : Wizārat al-Awqāf, al-Majlis al-A'lá lil-Shu'ūn al-Islāmīyah, Markaz al-Sīrah wa-al-Sunnah, 2001): 8.

[80] The person mentioned by our author is most likely 'Uthmān bin Alī bin Muḥammad bin Muḥammad al-Ghazzī al-Mālakī(d. 1009 A.H./1600 A.D.). He was born in Egypt and died there. He was scholar in Arabic. He has also produced many works. See Kaḥḥālah, op. cit., v. 6, 264.

[81] See Kaḥḥālah, op. cit.

[82] Baghdādī, op. cit.

[83] See edited text and translation, p. 89.

There is considerable confusion as to 'Abd Al-Wāḥid's date of death. While it is clear from the above that he practiced in Egypt around 980 A.H. /1572A.D. every secondary source that mentioned the author's name dated his death at 944A.H. /1537A.D,[84] except for two, which date his death at 1099A.H. /1688A.D.[85] Neither date is plausible with an adult living in 1572 A.D. What could possibly explain such a discrepancy?

The most likely possibility is that there were some errors with cataloguers regarding his date of death. Ḥajjī Khalīfa does not give a date of death for the author, and he is the oldest source. It is hard to determine as to where cataloguers who reported his death at 944 A.H.(1537 A.D.) received their information, as many do not cite their primary sources. Ṭalas, who is the source for the date of death of 1099A.H., must have gotten his information from the manuscript he himself catalogued, as his only other source is Brockelmann who does not give a date of death. [86]

A possibility we must consider is that there were two scholars with very similar names that were confused by cataloguers. If one examines historical biographies of the 16th century one finds a scholar of grammar and Malākī jurisprudence, named 'Abd al-Wāhid al-Maghrabī, who is reported to have died in 944A.H. (1537 A.D.) in Bīmāristān al-Nūrī. There is no indication in these sources that this scholar was also a physician.[87] This means that there may be another 'Abd al-Wāhid al-Maghrabī, a physician, who

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[84] See Sesen, op. cit., Kaḥḥālah, op. cit., Baghdādī, op. cit., Yusuf Zaydan, *Fihris makthutat baladiyat al-Iskandariyah* (Al-Iskandariyah : al-Hayah al-'Ammah li-Maktabat al-Iskandariyah, 1996): 81.
[85] See Ziriklī, op. cit. Zirikli's source is Ṭalas who most likely got this date from the manuscript he catalogued. See Ṭalas, op. cit.
[86] Ibid.
[87] See 'Abd al-Ḥayy ibn Aḥmad Ibn al-'Imād, (1623-1679), *Shadharāt al-dhahab fī akhbār man dhahab* (Dimashq ; Bayrūt : Dār Ibn Kathīr, 1986): v. 10, 365; Najm al-Dīn Ghazzī (1570-1651), *Al-Kawākib al-sā'irah bi-a'yān al-mi'ah al-'ashirah*, Ḥaqqaqahu waḍabaṭa naṣṣahu Jibrā'īl Sulaymān Jabbūr(Bayrūt, al-Maṭba'ah al Amīrikānīyah, 1945-1958): v. 2, 185.

lived in Egypt few decades later, and also carried the last name al-Dalāj. This makes sense considering that there are no clues in the manuscript suggesting a presence in Syria. However, there is still the question of where cataloguers got the information of 'Abd al-Wāhid al-Maghrabī's position as chief physician at the Nūrī hospital,[88] and hence the only way to really make sense of these discrepancies is to study other works attributed to 'Abd Al-Wāḥid Al-Maghribī. A survey of manuscript catalogues reveals that works by him survived in extant manuscripts. Unfortunately, none have been published or studied yet by either Western or Arab scholars.

The Author's Works

I have compiled a list of all the works of our author and the catalogues in which they can be located in. The list is definitely not exhaustive, as there are certainly catalogues that I missed. Unfortunately, the catalogues offer little knowledge about the contents within the treatises. The titles, just as in our text, are flowery, and make it hard to decipher the subject of the treatises.

Title	Catalogues
The Gift of a Lover in the Profession of Medicine. *تحفة المحب في صناعة الطب.*	1. *Catalogue of Islamic medical manuscripts (in Arabic, Turkish & Persian) in the libraries of Turkey* (Four copies).[89] 2. *Al-Kashāf 'an Makhṭūtāt Khazā'īn Kutb al-'Aūqāf*[90] 3. *Kitāb makhṭūṭāt al-Mawṣil* [91] 4. *Fihris makhṭūtāt baladiyāt al-Iskandariyah.* [92]
A Guiding Lantern in the Skill of Using the Voice and the Eye to Determine Strength, Weakness, and Temperament.	*Catalogue of Islamic medical manuscripts (in Arabic, Turkish & Persian) in the libraries of Turkey.*

[88] Kaḥḥālah, op. cited., and Baghdādi, op. cited.
[89] Sesen, op. cited.
[90] Talas, op. cited.
[91] Chalabi, op. cited.
[92] Zaydan, op. cited.

ضوء السراج في معرفة ما يدل عليه الصوت والعين من القوى والضعف والمزاج.	
The Aptitude of the Experienced in the Knowledge of the Urine [Exam] and [Measuring of] the Pulse. *كفاية المدتاض في علمى الأبوال و الأنباض.*	*Catalogue of Islamic medical manuscripts (in Arabic, Turkish & Persian) in the libraries of Turkey.*
The Gift of the Loved One in the Art of Curing and Medicine. *منحة الحبيب في صناعة العلاج والطبيب.*	*Catalogue of Islamic medical manuscripts (in Arabic, Turkish & Persian) in the libraries of Turkey.*
The Gift of a Student in the Principles of the Pulsating Artery. *تحفة الطالب في أحكام العرق النابض.*	*Kitāb makhṭūṭāt al-Mawṣil*
The Quintessential Gift in the Knowledge of Curing and Health. *زبدة المنحة في علمي العلاج و الصحة.*	Brockelmann[93] : Brill – H.[2] 571(Hds. V. J. 986)
The Familiar Garden on Theriaca. *الروض المأنوس في الدرياق.*	Brockelmann : (Gotha 2016).

[93] Brockelmann, op. cit.

Putting the Author into Context

In the following pages, I will attempt to construct a picture of 16th century medicine in Cairo and Damascus, in order to shed some light on the context in which 'Abd Al-Wāḥid lived and worked. The study of any text should always be localized within its context, something that studies of Islamic medical texts have been slow to incorporate. Unfortunately, there has been little written on Arabic medicine in this time period, for reasons we shall elaborate on later. Consequently, the image of medicine depicted here must only be taken as a preliminary investigation, consisting of scattered pieces of evidence I have collected from secondary and primary sources.

Damscus, Cairo, and the Ottoman Transition:

'Abd Al-Wāḥid Al-Maghribī (fl. 980) lived in the Arab cities of Damascus and Cairo, after they had become absorbed by the Ottoman Empire in 1516/1517. Both cities, especially Cairo, were important political, economic, cultural, and educational centers of the Mamluk Sultanate[94] and it would be reasonable to assume that the transition from capitals of the waning Sultanate to mere provincial cities of an empire, would lead to considerable economic, political, and educational decline for these two major cities. This generally accepted assumption has been challenged by new research.[95]

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[94] The Mamluk dynasty was established when military slaves (Mamluks) murdered the heir of the Ayyūbid sultanate and placed one of their own as sultan. Thereafter, Egypt and Syria were ruled by Mamluks or sons of Mamluks from 1250 to 1517. See "Mamluk." *Encyclopædia Britannica* (Encyclopædia Britannica Online, 2008). Accessed (1- 21-2008). <http://www.britannica.com/eb/article-9050404>.

[95] For a summary of the evolution of scholarship on Arab provinces under the early Ottoman Empire, see the introduction in Andre Raymond's *Arab Cities in the Ottoman Period: Cairo, Syria and the Maghreb* (Burlington, Vermont: Ashgate Publishing, 2002).

In reality, many Arabic cities witnessed impressive growth under the Ottoman Empire in the 16th and 17th century, especially Cairo, Aleppo, and Damascus. Reymond argues that the stability and organized administrative system that eventually emerged and evolved in these cities under Ottoman rule, and their key locations, allowed them to play a role as major redistribution and storage centers for products of the Empire, resulting in economic and other growth in the 16th and early 17th centuries.[96] Cairo and Damascus were also important to the Ottoman Empire because they were large centers of Islamic learning and science, and were the main points from which the annual pilgrimage(*hajj*) to Mecca was organized.[97]

The urban development of Damascus took shape with the construction of many charitable, religious, and commercial complexes from 16th to 18th century. Damascus, in fact, was one of the few Arabic cities that received direct Sultānic endowments.[98] The expansion of Damascus is evidenced by the construction of the Sultān Sulayman complex (1554-1566), the Muṣtafā Pāsha *khan* (1563-67) [99], the Muṣtafā Pāsha '*amara* (1563-1567)[100], the mosque and sepulchral monument of Darwīsh Pasha (1571 and 1579),

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[96] Raymond, op. cit., 19.

[97] Albert Hourani, *A History of the Arab Peoples*(New York: Warner Books, 1991): 227. This brought 30,000-40,000 travelers every year to Cairo, and 20,000-30,000 every year to Damascus. Such organized caravans are important for the amount of trade and business they brought to these two cities, and the fact that they encouraged the Sultān and governors of Damascus and Cairo to establish roads, bridges, commercial centers, and chartable endowments in the cities(Raymond, op. cit., 21). One must however also consider that this also allowed these cities to operate as meeting points for religious scholars, doctors, jurists, geographers, and historians from all over the Empire.

[98] The Sultan Selim I, for example, ordered the construction of a mosque and covenant/public kitchen on the site of the tomb of the great Sufi scholar Ibn 'Arabī. Suleyman I also built a huge complex in Damascus that included a mosque, a hospice, caravanserai, public kitchen, and *madrasa*. See Cigdem Kafescioglu, "'In the Image of Rūm': Ottoman Architectural Patronage in Sixteenth Century Aleppo and Damascus," *Muqarnas* 16(1999): 71.

[99] The Muṣtafa Pasha Khan comprised of 170 stores, a mosque, and a bakery. He also erected a market of 60 stores nearby, as well 79 more shops and bath in *Sūq al-Ṣarāfin*. See Muhammmad Adnan Bakhit, *The Ottoman Provinces of Damascus in The Sixteenth Century*(Beirut: Librairie du Liban, 1982): 116.

[100] This included a caravanserai, a mosque, a school, and lodges for the poor. Food was free of charge in evenings and guests could stay for three months. Ibid.

the Mūrād Pasha mosque (1572)[101], the mosque and school of Sinān Pasha (1586), and the Qadām mosque (16th century).[102] This new infrastructure created an urban setting that would encourage the social integration of the city and its population into the Ottoman Empire.

Similar to Damascus, Cairo appeared to benefit from Ottoman rule in 16th century, as evidenced by the fact that the Ottomans had built five major religious buildings from 1517 to 1570 in Cairo.[103] Cairo was more important than Damascus to the Ottomans, because of its location on trade routes, and because it was a major supplier of sugar and grain. Hence, the Ottomans expanded the commercial centers of Egypt, building 15 new commercial centers in just one of Egypt's ports in the 16th century. [104] Unlike Aleppo and Damascus, however, no major urban projects were undertaken in Cairo by the Ottoman Empire in the 16th century,[105] most likely because Cairo's superior building architecture and abundance of institutions was deemed sufficient.[106] Many of the religious, educational, and charitable *waqfs* (endowments) of Cairo were believed to have fallen into corruption and abuse towards the end of the Mamluk period. For this reason, the Ottomans' goals were to physically remodel and institutionally reorganize these endowments.[107] As a result, while Cairo did not necessarily experience a physical growth, it did continue to function as a leading center of commerce, education, and religion.

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[101] This mosque also included rooms for lodging travelers and the poor. Ibid., 177.
[102] Raymond, op. cit., 27.
[103] M. Tarek Swelim, op. cit., 98.
[104] Doris Behrens-Abouseif, *Egypt's Adjustment to Ottoman Rule: Institutions, Waqf and Architecture in Cairo*(New York: E.J. Brill, 1994): 147.
[105] Ibid., 273.
[106] Ibid., 273.
[107] Ibid., 147.

One of the more important things to consider is the new charitable institutions that the Ottomans infused into the urban environments of Egypt and Syria. These included *imarets* (public soup kitchens), travel inns(*karavanserays*), hospices, and boarding schools (*takiyyas*). They were all new types of charitable institutions that attempted to provide systematic relief for travelers and the poor, something not undertaken as rigorously by the Mamluks.[108] As we will see, these organizations would also evolve to play a role in health care.

Given the growth witnessed by these two cities in the 16th century, one would be interested to know if medicine and health institutions also benefited from such development, and how they fared in this

Early Ottoman Medicine and the Decline of Medicine in the Arab Provinces:

According to the few studies done on medicine in early Ottoman Empire, the state of medicine in the 16th century Ottoman capital appeared to be one of progress, reflecting the overall extensive growth the Empire experienced, as a whole, in that period.[109] Numerous hospitals were founded in the capitals and surrounding cities, which appear to have been very lavish and sophisticated institutions. [110] A medical

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[108] Ibid., 161-164. Also see Gary Leiser and Michael Dols, "Evliya's Celebi's Description of Medicine in 17thc. Egypt: Part One," *Sudhoffs Archiv 71*(1987): 206-7.

[109] For studies on early Ottoman Medicine see Shefer, "Hospitals," and Shefer, "Physicians in Mamluk and Ottoman Courts," in *Mamluks and Ottomans*, ed. David Wasserstein and Ami Ayalon(New York: Routledge, 2006); Ekmeleddin İhsanoğlu, "Ottoman Science: The Last Episode in Islamic Scientific Tradition and The Beginning of European Scientific Tradition," in *Science, Technology, and Learning in the Ottoman Empire: Western influence, local institutions, and the transfer of knowledge*, ed. Ekmeleddin İhsanoğlu (Burlington, VT: Ashgate/Variorum, 2004); İhsanoğlu, "Ottoman Educational and Scholarly Scientific Institutions," in *History of The Ottoman State, Society, and Civilization*, ed. Ekmeleddin İhsanoğlu(Istanbul: IRCICA, 2002): vol. 2, 361-519; İhsanoğlu, "The Ottoman Scientific-Scholarly Literature," in *History of The Ottoman State, Society, and Civilization*, ed. Ekmeleddin İhsanoğlu(Istanbul: IRCICA, 2002): vol. 2, 519-607;

[110] Health institutions in Ottoman Empire were called *dârüshifâ*, *shifâhâne*, or *bīmarīstan*. The largest and most reputable of these institutions included the hospital of Beyazit I(r.1389-1402) in Bursa, the Fatih

college was established in Istanbul, and many *madrasas* (colleges) were required to include courses on the rational and medical sciences.[111] Many Arab, Persian, and even European doctors were recruited to work in these hospitals and in the Sultan's courts,[112] and according to Shefer's research many doctors were able to obtain great wealth and fame by serving in the Sultan's court.[113] Ihsanoglu claims that the 16th and 17th centuries marked the most developed period for Ottoman medicine, where many famous doctors and original works were produced.[114]

Hence, Abd Al-Wāḥid Al-Maghribī lived at a time where there was an impressive establishment of new health institutions in Istanbul, opening up new and rewarding opportunities for physicians. However, we can not claim that this flurry of new health institutions extended to the peripheries of the Empire. Research thus far has not found evidence yet indicating that any of the new or remodled institutions that the Ottoman's established in Syria and Egypt were hospitals.[115] Is the lack of hospital development after the Ottoman conquest in these cities a reflection of the state of medicine in Arab

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dârüshifâ in Istanbul(1470), The Beyazid II *dârüshifâ* in Edrine(1481), the Hafsa Sultan *dârüshifâ* in Mansia (1522-23), the *Süleymaniye dârüshifâ* in Istanbul(1550), the *Haseki dârüshifâ* in Istanbul*(1550),* and the Sultan Ahmet I(r. 1603-1617) *dârüshifâ* in his Istanbul Complex. In addition to hospitals made for the public, we also know that private hospitals existed within the Sultān's palaces. See Shefer, "Hospitals," 121; İhsanoğlu, "The Last Episode," 17; İhsanoğlu, "Ottoman Educational and Scholarly Scientific Institutions," vol. 2, 400-407.

[111] İhsanoğlu, "The Last Episode," 16.

[112] İhsanoğlu, "Ottoman Educational and Scholarly Scientific Institutions," 405. See also Shefer, "Physicians," 115.

[113] For information on physicians in the Ottoman courts see Shefer, "Physicians." Also see Shefer, "Hospitals."

[114] İhsanoğlu, "The Ottoman Scientific-Scholarly Literature," vol. 2, 574.

[115] While I have not come across any evidence suggesting the establishment of new health institutions in Damascus or Egypt during Ottoman reign, the research on these cities in early Ottoman times is little and any such claim is in doubt until more evidence is surveyed. Dols, for example, makes a passing note in one of his articles that a German traveler to Damascus in 1805, Ulrich Seetzen, documented three functioning leper hospitals. It is possible then, that small hospitals were established in the Ottoman period, but have gone unnoticed by historians. See Dols, "The Leper in Medieval Islamic Society, " *Speculum* 58, No. 4 (Oct., 1983): 910-911.

provinces? Does this mean that the growth of medical activities in the central Ottoman Empire came at the expense of a decline in the medical activities of distant cities such as Damascus and Cairo?

While most scholars have dated the decline of Islamic medicine to be around the 11th century and have relegated Ottoman medicine as dogmatic replications of the past and accordingly irrelevant (this scholarship will be discussed later), there have been some scholars that have pushed back the date of decline to the 14th and 15th centuries, and these historians argue that the center of medicine shifted thereafter to Ottoman Istanbul or Savafid Persia. Doris Behrens Aboseif argues that the decline of medicine in Egypt and Syria must have started in the 14th century when information on physicians diminished in historical works. In her eyes, the growing gap between applied and theoretical medicine led to a decline in actual medical practice because the medical practitioner was judged as a "highly qualified craftsman," and applied medicine was seen as a non-lucrative enterprise, compared to being a religious scholar.[116] She argues that medicine in Cairo was in total decadence in the sixteenth century, and that the center of medicine shifted to the Istanbul, where it flourished at the Sultan's court.[117]

Emily Savage-Smith, along similar lines, argues that because the Mamluks where able to fend off the invasion of the Mongols, the scientific activity in Egypt and Syria continued well into the 14th century, but "within two more centuries nearly all traces of serious scholarly activity had disappeared." The only exception was Safavid Persia which continued to produce medical works "with some degree of originality"

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[116] Doris Behrens-Abouseif, "The Image of the Physician in Arab Biographers of the Post Classical Age", *Der Islam* 66(1989): 336.

[117] Doris Behrens-Abouseif, *Faṭh Allāh and Abū Zakariyya: Physicians under the Mamluks* (Cario: Institut Francais D'Archelogie Orientale, *1987)*: 19; Doris Behrens-Abouseif, " Image," 341-42.

through the 16th and 17th centuries.[118] Mohamad Abdulla, after illustrating examples of Arabic medical achievements after the 11th century, follows Savage-Smith and claims that "the learned medical community remained quite active through the fourteenth century, particularly in Syria and Egypt," but thereafter fell into decline.[119]

It is difficult to assess how these scholars made such claims, considering that no Arabic medical texts have been critically studied in this time period, and that no serious survey of historical chronicles and biographies has been performed to analyze information on medicine.[120] A review of the medicine in Syria and Egypt in the 16th and 17th centuries, as well as a look at the migrational pattern of doctors, casts doubts on the claim that serious medical activity and scholarship had disappeared.

The Migrational Pattern of Physicians in the 16th Century:

While it is true that Ottoman courts were known for being filled with Arabic doctors to serve the Sultan, and that many Arab physicians migrated to Istanbul in search of money and fame, [121] we also have evidence that throughout the 16th and 17th

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[118] Emily Savage Smith, "Medicine," in *Encyclopedia of the History of Arabic Science*, ed. Roshdi Rashed (London: Routledge, 1996): 955-956.

[119] Mohamad Abdalla, "The Fate of Islamic Science between the 11th and 16th Centuries: A Critical Study of Scholarship from Ibn Khaldun to the Present," PhD Thesis (Griffith University, 2003): 217, 218. Accessed 10/2/2007. <http://www4.gu.edu.au:8080/adt-root/public/adt-QGU20040618.091027/index.html>

[120] A critique of Behrens-Abouseif's work must be made here. Despite her study of Arab biographers of the 16th century, she only relies on a few of the physicians' biographies, while there are 15-20 biographies of physicians in the primary sources that she cites. I have used much of the same primary sources in my study of Syria(see below), and have arrived at a completely different picture. Her main evidence for decline, other than the story of Dāwūd al-Antākī , are the memoirs of a 16th century European physician, Prosper Alpin, who lived in Cairo for three years, and she fails to mention the fact that this physician went to Egypt to try and master some of their pharmaceutical recipes. See Behrens-Abouseif, "Image," 331-342. For a Prosper Alpin's praise for Egyptian pharmacology, see Gary Leiser and Michael Dols, "Evliya's Celebi's Description of Medicine in 17thc. Egypt: Part One," *Sudhoffs Archiv 71* (1987): 212-213.

[121] While there is evidence of Arabic physicians in Ottoman courts and hospitals, there has been no attempt at tracing the migrational routes of these physicians. Shefer, "Phsyicans," 115. İhsanoğlu, "Ottoman Educational and Scholarly Scientific Institutions," 405.

centuries, Islamic physicians from all over the Empire continued to travel to Damascus and Cairo to obtain their medical education.

The famous physician Dāwūd ibn 'Umar al-Antākī (d. 1599A.D), was born in Antioch and could have traveled to Istanbul to further his medical education, but instead ventured to Damascus and then Cairo, which he had perceived as the leading center of medicine at the time.[122] Al-Antākī was disappointed with the state of medicine in Cairo, but was impressed with the scholars of Damascus. Taqi al-Dīn (1525-1585), the famous astronomer and also a physician, began his studies in Damascus and furthered them in Cairo, where he was selected to be become Sultān's court astronomer. Muḥammad ibn Muḥammad al-Qawṣūnī (fl. 1520-1574), who was court physician to Sultan Sulaymān I (1520 to 1566), and Selim II (1566 to 1574), was born and educated in Egypt, Cairo, where his father was a head of physicians at the famous Manṣūrī Hospital.[123] The recognition of Syria and Egypt as centers of medical knowledge and as producers of great physicians continued into the 17th century. Take for example, Emir Celebi (d. 1638). He was born in Anatolia and could have easily migrated to Istanbul to learn medicine, but instead migrated to Cairo, where he excelled and became head physician at the Manṣūrī hospital. He was later recruited to become a court physician for Murat IV (1624-1440).[124] Ibn Sallūm (d. 1670)[125] grew up and received his medical education in Aleppo, Syria. He became Head of Physicians in Aleppo. He was later

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[122] Ahmad Isa, *Mu'jam al-Aṭibbā': Min Sanat 650 H ilā Yawminā Hādhā,* (Miṣr : Maṭba'at Fatḥ 'Allāh 'Ilyās Nūrī, 1942). Also see Muḥammad Amīn ibn Faḍl Allāh al-Muḥibbī, *Khulāṣat al-athar fī a'yān al-qarn al-ḥādī 'ashar(*Bayrūt, Lubnān : Maktabat Khayyāṭ, 1966): v. 2 p. 141.

[123] See his life in Smith, "Bibliographies," *Islamic Medical Manuscripts at the National Library of Medicine,* http://www.nlm.nih.gov/hmd/arabic/bioQ.html (9/27/2007). See information about his father Shams al-Dīn al-Qawṣūnī in Ahmad Isa, *Tā'rīkh,* 100. Also see Najm al-Dīn Ghazzī (1570-1651), *Al-Kawākib al-sā'irah bi-a'yān al-mi'ah al-'ashirah,* Ḥaqqaqahu waḍabaṭa naṣṣahu Jibrā'īl Sulaymān Jabbūr(Bayrūt, al-Maṭba'ah al Amīrikānīyah, 1945-1958): v. 1, 95.

[124] Shefer, "Physicians," p. 117.

[125] Muḥibbī, op. cit., v. 2, 240.

recruited to become Head of Physicians of the entire Empire under Mehmet IV (r. 1648-87) and was awarded with a fur coat and ceremonial gifts for his work on chemical medicine.[126]

One can deduce from this that physicians were more likely to attain wide success in Constantinople if they had acquired their education in Arabic provinces, especially Damascus and Cairo, and that both Egypt and Syria still carried the reputation of producing leading physicians well into the 17th century. As we will see, the continuous function and legacy of the Nūrī hospital in Damascus and the Manṣūrī hospital in Cairo most likely played a role in the continued ability of these cities to offer good medical training, alongside their reputation as cities of learning. This evidence challenges the supposition that the state of medicine in Syria and Egypt was in complete desolation at the time. A closer look at what we know of the medical activity of Damascus and Cairo also questions the narrative of decline.

Medicine in 16th Century Syria:

With the exception of Bakhit's one page covering medical institutions in his wider work on 16th century Damascus, nothing has been written on medicine in 16th century Syria. Fortunately, some of the work of Syrian historical chroniclers and biographers of 16th and 17th centuries has been edited and published, and this allowed me to create a preliminary picture of medicine in the time period under question.

According to Bakhit, there were two functioning hospitals in Damascus after the Ottoman conquest; the Nūrī hospital (established in 1156A.D.) and Qaymarī hospital

[126] Shefer, "Physicians," 116.

(established around 1255 A.D.).[127] It appears that other hospitals established in Damascus between the 8th and 14th centuries had perhaps ceased to function by the 16th century, as no evidence has yet surfaced of their operation in primary sources.[128] Despite this, evidence collected from various biographical histories suggests that the two existing hospitals still played prominent roles in society.

The Nūrī hospital appears to have still been a very prestigious institution, as its administration was a coveted and highly esteemed position, and for the most part assigned to an Ottoman (i.e. Ottoman diplomat or representative).[129] This was not the case with less prestigious hospitals like those of Aleppo that were administered by locals.[130] The administrators were usually not doctors, but rather political officials or judges. A native of Damascus usually occupied the position of post clerk at the Nūrī hospital.[131]

While we know that historically, Nūrī hospital played both an in-patient and out-patient role, there is no evidence that it continued to play an out-patient role in the 16th century. [132] On the other hand, the less famous Qaymarī hospital provided both in-and-out patient care. The medical staff was mostly local Damascene there, but the

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[127] Bakhit, op. cit., 134.
[128] For a list of hospitals established in Damascus see F.S. Haddad, "Arab Medicine and Science," Middle East Journal of Anesthesiology 4 (no. 2, 1974): 86. It is worthwhile to mention that we do have evidence of four leper houses functioning in and around Damascus in the early 19th century. See Dols, "The Leper in Medieval Islamic Society," Speculum, v. 58, No. 4 (Oct., 1983): 914-916.
[129] For specific administrators see Ghazzī, *Kawākib*, v.2, 121, 137, 149, 214. See also Najm al-Dīn Ghazzī, *Luṭf al-samar wa-qaṭf al-thamar* (Dimashq: Manshūrāt Wizārat al-Thaqāfah wa-al-Irshād al-Qawmī, 1981-1982): *v. 1, 394-395.*
[130] For administrators in *Ḥalab*, see Ghazzī, *Kawākib*, v.2, 137, and Muḥibbī, op. cit., v. 2, 240.
[131] Bakhit, op. cit., 135.
[132] Bakhit, op. cit., 134.

supervisor was usually a foreign Ottoman official. The only local supervisor that we have evidence of was the Damascene Yūsuf b. al-Munqār (d. 943/1536).[133]

The Ottomans may have not built new hospitals, but they did fully renovate and renew the endowments (*waqfs*) of the existing hospitals. For example, in the early 17th century, when the former *agha* of the Janissaries, Ḥasan Pāshā Shawarbazī (d. 1027/1617), became administrator of the Nūri hospital, his remodeling effort was so outstanding, "it could not be outdone."[134] He was then recruited to administer the Qaymarī hospital; however, he would not agree to become administrator of Qaymarī hospital until the chief physician at the hospital agreed to the stipulation that he would not overdraw from the exact sum of provisions appropriated for the hospital. Shawarbazī felt that the hospital endowments had been depleted because of unnecessary overspending,[135] a fact indicating that allocation of hospital resources in the most efficient manner was a very important concern and that financial resources were limited.

The Nūrī and Qaymarī hospitals continued to serve the poor,[136] travelers, and the mentally ill. The story of Muḥammad Shams al-Dīn al-Tatā'ī al-Masrī al-Malakī (d. 930AH), a prisoner who was stricken with weakness due to a chronic disease, was

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[133] Bakhit, op. cit., 135. See also Ghazzī, *Kawākib*, v.2, 262.
[134] Ghazzī, *Luṭf, v. 1, 394-395.*
[135] Ghazzī, *Luṭf, v. 1, 394-395.* Bakhit claims that the supervision of the hospitals was combined thereafter (Bakhit, op cit., 135).
[136] Hospital were associated with the serving the poor to the extent that when the physician Muḥammad ibn 'Abd al-Qādir al-Qawayḍī al-Ṣālaḥī al-Ṭabīb (d. 979 A.H.) left his work at the Qaymarī hospital to confine his practice to the elite and rulers, he was described as abandoning the care of the poor. Ghazzī, *Kawākib*, v.2, 44.

taken to the Nūri hospital, suggests that prisoners were also treated at the hospitals.[137] It further suggests that the hospital played the role of the hospice in some cases.

In addition, the hospital attended to acute diseases, such as the case of Ibrāhīm al-Rūmī (fl. 16th century) who was carried to the Nūri hospital only after his disease had become severe.[138]Ibrāhīm al-Rūmī was also the administrator of the teachers at the Muqadamīyah school in Damascus,[139] indicating that Nūri hospital did not only serve the poor, as it strictly did in earlier years.[140] As matter of fact, in 16th century historical biographies, many scholars and jurists are reported to have died in the Nūri hospital, signifying that the Nūri hospital may have become a health institution that also catered to the local and foreign scholars and judges of surrounding institutions.[141]

The hospitals of Damascus additionally appeared to play a role in setting certain communal health regulations and perceptions. This was especially the case regarding contagious disease. The hospitals of Damascus gave certificates to patients upon discharge verifying that they were not contagious.[142] One example of this is the following court case (in 992 A.H., 1584 A.D.):

> Muḥammad b. Mar'ī was accused by Muḥammad b. Jamāl of having the disease of leprosy (*judhām*). He possessed a certificate of clearance of contagion in this respect from the chief physician. Muḥammad b. Jamāl, however, objected to living near him. The judge examined the certificate and its signature and declared it authentic, and pronounced the verdict that no one had the right to interfere with Muḥammad b. Mar'ī.[143]

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[137] Ghazzī, *Kawākib*, v.1, 94. The prisoner remained there until he passed away, indicating his disease was chronic.
[138] Ghazzī, *Kawākib*, v.2, p 87.
[139] Ibid.
[140] Isa, *Tā'rīkh*, 206-08.
[141] For examples, see Ghazzī, *Kawākib*, V.1, 217-218, 257. V. 2, 87, 185.
[142] Bakhit, op. cit., 134.
[143] Bakhit, op. cit., footnote 98. He translated *judhām* incorrectly as elephantiasis, and I have fixed it above. His source was *Sijill al-Maḥkama al-Shar'iyya*, Damascus, vol. I, year 992, case no. 202, p. 191.

This case indicates that hospitals and their staff were part of wider public health efforts run by the governors. It also shows a high level of sophistication amongst the medical community. Contagion is a characteristic of particular diseases that physicians could identify, and before such evidence, allegations and their implications were not valid. In other words, physicians were used in creating policies against contagion.

Another medical highlight of 16th century Syrian hospitals can also be seen in the treatment of the mentally ill. The case of Abū Sanqar al-Ba'lī (d. 930AH) illustrates this point well. He was a native of Damascus who was publicly acknowledged as mentally ill. He was very popular and everybody in Damascus called him "the protector of Damascus." He carried around a large thimble and stick, and when spoken to, would bang the stick against the thimble before responding. What is most fascinating about his case, however, was that he used to wear a turban with a notebook attached to it. In the notebooks, he had his medications recorded. He was a patient of Nūri hospital, where he also passed away.[144] This evidence supports Dol's conclusion that in the mid to late 17th century, the Nūrī hospital recorded the treatments of the mentally ill in charts, and organized three musical concerts a day for the mentally ill.[145] Not only is mental illness here seen as physical ailment that can be treated with medicine, but we must acknowledge that its treatment by doctors as well as by society is admirably humane.[146]

The fact that the Ottoman administration was so involved in running these two hospitals, illustrates the importance and prestige the hospitals enjoyed in Damascus. It

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[144] Ghazzī, *Kawākib*, V.1, 121.
[145] Dols, *Majnūn*, 171.
[146] Another example illustrating the treatment of the insane is seen in the biography of Ahmad al-Sayyid al-Sharīf al-'ātakī al-Damashqī (d. 936 A.H). He was one of the mentally ill in the Damascus who use to attend the school of Abī 'Umar in al-Ṣāliḥiyah. He was a patient of Qaymarī hospital. He was loved by society and it is reported that many people attended his funeral. Ghazzī, *Kawākib*, V.2, 117.

appears that the Nūrī hospital continued to function until its closure in 1899 A.D.[147] and fragmented evidence of its large staff and admirable function in the late 17th century also suggests that this high level of organization may have perhaps been fairly constant throughout.[148]

In addition to hospitals, many doctors practiced privately and had their own private clinics.[149] If these clinics were big enough, they were often called *Dār al-Shifā*, a word also used as the word for hospitals in other regions and later centuries.[150] Unfortunately, we do not have detailed accounts of these private clinics.

It is also likely that the many the caravanserais that the Ottomans built in Damascus operated as clinics. Jean Thevenot, a French traveler of the seventeenth century, misinterpreted a traveler's inn (a caravanserai) that was part of the Takkiya Sulaymaniyya, for a hospital.[151] Such a mistake hints at the possibility that doctors were present at the inn for sick travelers and that they functioned in many senses as makeshift hospitals.

Little is known about medical education in Syria during the period. However, we can assume that the two functional hospitals continued to be practical training facilities for doctors, but that the number of people they could train was limited. It

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[147] Isa, *Tā'rīkh*, 214.
[148] Dols, *Majnūn*, 171-172.
[149] Muḥammad ibn 'Abd al-Qādir al-Qawaydī al-Ṣālaḥī al-Ṭabīb(d. 979AH) and his father use to have a clinic in the neighborhood of Ḥamām al-Muqadim. Ghazzī, *Kawākib*, v. 2, 44
[150] For *Dār al-Shifā* in Damascus see the story of Yūnis bin Yūsif (d. 966AH), who was dismissed from "Head of Physicians" and had to return back to treating patients in Dār al-Shifā (Ghazzī, *Kawākib*, v.2, 263). The fact that the author uses the word *Bīmāristān* throughout his whole work when referring to hospitals indicates that his usage of *Dār al-Shifā* implied a different institution. For another example of a physician opening his own *Dār al-Shifā* in Mecca, See Muḥibbī, op. cit., v. 2, 244-5.
[151] Shefer, "Hospitals," 128.

appears that the "Head of Physicians" (*ra'īs al-aṭibbā'*)[152] also taught medical classes at the Nūrī *Madrassa*[153], indicating that medical classes were still a part of the educational curriculum of this college.[154] Other physicians such as 'Abd al-Qādir al-Qawayḍī (d. 947 A.H./1540 A.D.) appear to have offered private lessons in their own clinics.[155]

The possibility to study medicine was not confined to the inhabitants of big cities or to those from a family already established in the medical profession. This is exemplified by the story of Muḥammad al-Shahīr ibn al-Ghazāl al-Humṣī (d. 1035A.H.) , Head of Physicians of Damascus. He started out in the smaller town of Humṣ and traveled to Ṭarāblus. There he was fortunate enough to work for its governors, where he treated the sick. He was so wildly celebrated that people prayed for him. He then traveled to Damascus and became the Head of Physicians and was often referred to as the chief of all educated and cultured men. He was appreciated by both the general public and the elite.[156] Over the years he became renowned for his medical knowledge and treatments. He is described as being the most beautiful of companions and the most elegant in conversation and lecturing. It was said of him that "Hippocrates was his time and life, [and] Galen was of his era and time."[157]

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[152] The position of "Head of Physicians" included oversight over all doctors in Damascus. Under the Mamluks, the governor of Damascus appointed the head of each division of medicine (i.e. general practice, surgery, optometry).This appears to have changed under Ottoman rule, where the "Head of the Physicians" was appointed by an Ottoman official, after the medical guild had nominated him(Behrens-Abouseif, "Image," 338).

[153] A completely separate institution than the hospital.

[154] Muḥibbī, op. cit., v. 4, 229-300.

[155] Ghazzī, *Kawākib*, v. 2, 172-3.

[156] Muḥibbī, op. cited., v. 4, 229-300.

[157] He also had his critics, who use to sing this verse about him: "Who of the sick he visited on Wednesday, all died on Thursday." He died 1035 A.H., when he was stricken with an illness and was not able to successfully treat himself. Ibid.

This example not only shows that someone from the small town of Humṣ could rise up and become a renowned and celebrated doctor in the large city of Damascus, but also that practicing physicians were widely appreciated by society.

Similar to Ottoman physicians in Istanbul, it appears that Syrian physicians who attented to the elite and ruling classes were the most well off.[158] Muḥammad al-Fanārī (d. 926AH), the judge of Aleppo, paid the Head of Physicians of Damascus, Shams al-Dīn ibn Makī, 4000 *dirhams* to treat him.[159] This helps to explain why many physicians, such as Muḥammad ibn Yūsif bin Alī al-Ra'īs Zayn al-'ābidīn al-Tarāblisī al-Tabīb (d. 993 A.H),[160] chose explicitly to confine their practices to the elite. It also explains why many physicians, such as Muḥammad ibn 'Abd al-Qādir al-Qawayḍī (d. 979AH), decided to leave their prestigious but not so lucrative positions at hospitals to become personal physicians to the elite. [161]

The physician, however, did not need to go through that path to have a successful and rewarding career. The story of 'Abd al-Qādir al-Qawayḍī (d. 947 AH), the father of Muḥammad ibn 'Abd al-Qādir, portrays a different kind of doctor. He was a physician widely known for his excellent skill in medicine, as well as a superb professor

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[158] For the life of the Ottoman physicians see Shefer, "Physicians," 114-123.

[159] Ghazzī, *Kawākib*, v.1, p. 22.

[160] Muḥammad ibn Yūsif bin Alī al-Ra'īs Zayn al-'ābidīn al-Ṭarāblisī al-Ṭabīb was extremely skilled in medicine and was widely recognized for his expertise in the physical exam. He learned medicine from Ṣahrah ibn Mākī and Ibn al-Qarīdī. He loved to treat scholars, using the money to trade and become a successful merchant. He also made his own medicines and distributed them to the elite when they needed them. He later confined his medical practice to become the personal physician of Shaykh al-'Islām, al-Wālid. It has been reported that he served al-Wālid for free, as an act of piety. See Ghazzī, *Kawākib*, v. 3 , 75, 154.

[161] Muḥammad ibn 'Abd al-Qādir al-Qawayḍī al-Ṣālaḥī al-Tabīb(d. 979AH) was a very famous clinician and widely known along with his father for their superb clinical skills. They use to have a clinic in the neighborhood of Ḥamām al-Muqadim around the year 890A.H. He was also a scholar of law, Ḥadīth, and grammar. He migrated to Istanbul, and when he returned to Damascus, became "Head of Physicians" of Damascus. He also worked at the Qaymarī hospital. He later left his work at the hospital, confining his practice to treating the ruling elite. Thus, he was known to have deserted his father's tradition of caring for the poor. See Ghazzī, *Kawākib*, v. 2, 44

of medicine. He spent his entire career treating the poor by going to their houses. He would not charge them anything, and would supply them with medicines that he himself would assemble. The whole city of Damascus is reported to have grieved over his death.[162] This story shows that a physician did not need to operate within the elite strata of society to become widely recognized and that there were perhaps different avenues by which a physician could attain respect and prestige.

Similar to past centuries, and representative of early Ottoman medicine as a whole,[163] Jewish doctors were welcome and part of the 16th century Syrian medical communities. While physicians belonged to varying socioeconomic and religious classes, solidarity with another member of the medical profession could and did transcend religious, economic, and confessional boundaries. The story of the Jewish physician from Damascus, Mikha'il, illustrates this. Yūnus, the head physician of Damascus at the time, petitioned Sultan Ahmet I (1603-17) to help the Jewish physician, who was an excellent and competent physician, but unfortunately very poor. He was troubled by debt and could not pay his taxes, which was a punishable crime. In response the Sultan issued an imperial decree on April 6, 1615 ordering the Judge in Damascus to investigate the case, and if Mikha'il was found to indeed be poor, he should be exempt from his taxes.[164]

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[162] He use to recite Quran as he walked to work everyday, and was popular poet. Ghazzī, *Kawākib*, v. 2, 172-3.

[163] The 16th and 17th century Ottoman Empire was known for including many Christian and Jewish physicians in the Sultan's court. As a matter of fact, they formed the majority of court doctors at certain times. A decree in 1574, for example, ordered that a vacant position among court doctors be filled by Muslim, since the number of Jewish doctors at the court was higher than Muslim doctors. It was not a perfect equality, as there is some evidence that Muslim physicians were paid slightly more than Jewish physicians. After the 17th century Christian and Jewish court doctors decreased in number for reasons that have yet to be thoroughly elucidated. See Shefer, "Physicians," 117.

[164] Shefer, "Physicians," 115.

The evidence for the existence of many celebrated physicians is an indication that medicine was still largely valued by 16th century Syrian society. In Damascus, people who knew medical men, could use it to get their foot into the circles of learning.[165] This indicates the prominence of physicians among men of learning.

Medicine in 17th Century Cairo:

Unfortunately, not much is known of medicine in Cairo, or of Cairo more generally, in the 16th century. Additionally, the historical chronicles that cover Cairo during that period are still mostly unpublished and accessible exclusively in manuscript form, which makes it difficult for one to survey them for hints of medical activity. [166] Even Ahmad Isa's fairly comprehensive history of the Manṣūrī hospital mentions nothing of the hospital's situation from the 15th century until the French invasion of Egypt(1798 A.D).[167] Fortunately, we can grasp a sense of the state of Egyptian medicine in the 17th century, thanks to the study of the chronicles of the famous Ottoman traveler, Evliyā Chelebi, by Gary Leiser and Michael Dols.[168] Chelebi lived in Egypt for approximately seven to eight years in the 1670s, and wrote much about the practice of medicine there. The Leiser and Dols study will be used here to obtain a picture of medicine in the late 16th century.

Chelebi describes Cairo as less diseased than other cities, a blessed city. "Praise God, no one has quartan or burning fever in the inner Citadel. If someone from a foreign country, who has malaria, stays for three days in the inner Citadel, by the order

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[165] Shefer, "Physicians," 118.
[166] Behrens-Abouseif, *Egypt*, 8-20.
[167] Isa, op. cit., 95-162.
[168] See Gary Leiser and Michael Dols, "Evliya's Celebi's Description of Medicine in 17thc. Egypt: Part One," *Sudhoffs Archiv* 71(1987) and "Evliya's Celebi's Description of Medicine in 17thc. Egypt: Part Two," *Sudhoffs Archiv* 72(1988).

of God, he is cured."[169] Such a view sheds light on Abd Al-Wāḥid Al-Maghribī's constant praise of Cairo as "the Protected City." It is recognized by Chelebi as a city with improved health because of its climate and environment.

In terms of its health institutions, we know from Chelebi's account that four hospitals were functioning in Cairo at the time. It also appears that more hospitals had been functioning before then, but that government officials had deemed them unnecessary and closed them down.[170] Unfortunately, Chelebi does not give a description of all four functioning hospitals, but does provide an excellent description of the Mānṣūrī Hospital.

Similar to the hospitals of Damascus, the Mānṣūrī hospital was well maintained and supported in Cairo during the 17th century. From Chelebi's account, the Manṣūrī hospital was not only fully functional, but the most impressive health institution in the Empire, as well as "a major tourist attraction of seventeenth century Cairo."[171] The hospital's marvelous and lavish grand physical layout was the best of its times:

> It has no equal in Anatolia or among the Arabs and Persians. The physicians who are intelligent men treat [the ill there]. There is a magnificent pool in the middle of a great court, which is paved with polished and burnished marble for 150 paces in both length and breadth. It has water jets [that shoot] the height of two men. Next to this pool is a place for prayer. A dome with an ornamented ceiling rests on twelve pillars over this splendid pool. At each of the four sides of this court is a great hall, each of which can accommodate 1,000 people.... At the end of the two halls is a wall fountain the height of a man. [The water] flows like a stream through the middle of these halls and comes to the pool in the middle of the court.
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> Four more halls were built with this arrangement. In them are the beds of those afflicted with illness. The sick wear bedclothes and have

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[169] Ibid.

[170] Leiser and Dols, "Part Two," 49. This evidence suggests that perhaps medicine in Cairo experienced a small decline in the late 16th century, making sense of Dāwūd al-Antākī's disappointment of medicine in Cairo.

[171] Leiser and Dols, "Part One," 200.

> silk sheets. Some of those who are ill relax next to the flowing ornamental fountains when they are close to recovering their health. The servants look after them with great care.[172]

According to Chelebi the hospital was caring for 306 patients at the time of his visit.[173] Similar to the situation in Syria, one finds great respect and admiration of the humoral physicians, and this evidence counters claims of a growing antagonism towards Galenic medicine as a result of the growth of Prophetic Medicine[174] in the post-15th century Middle East, as suggested by Behrens-Abouseif.[175]

> When food is provided from the soup-kitchen, twelve doctors and their students give electuaries and medications as well as food to each person, according to his condition .... The physicians in this place of healing are like Hippocrates, Socrates, Plato, Pythagoras, and Abū 'Ali ibn Sīnā. Each one, like Christ, could bring the dead back to life. ... All the physicians are accomplished masters. They are practicing phlebotomists and [men] of skill and integrity.[176]

Similar to the hospitals of Syria, the Manṣūrī hospital also treated the mentally ill with various medications and regimens, as well as with music and dance concerts.[177] "If someone who was bedridden for three years and is insane comes to this place, by the order of God, he gets well in forty days. The color of his face turns rose-red."[178] However, it also appears that the more violent mentally ill patients were placed in "in

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[172] Leiser and Dols, "Part Two," 53. Also see Dols, *Majnūn,* 123-124, for a lightly different translation of which I have used above.
[173] Ibid.
[174] Prophetic Medicine(*ṭibb al-nabawī*),was an alternative genre of medical writing. According to Pormann and Savage-Smith, the authors were clerics, rather than physicians, who attempted to produce a guide to medical therapy that was acceptable to the religiously orthodox. Prophetic medical texts combined "elements of Greek medical learning (in Arabic dress) and religious elements specific to Islam, with pre-Islamic Arabian practices." See Pormann and Savage-Smith, 74.
[175] See Behrens-Abouseif, Doris, *Faṭh Allāh and Abū Zakariyya: Phsyicans under the Mamluks.* Cairo: *Institut Francais D'Archelogie Orientale, 1987): 18-9.*

[176] Leiser and Dols, "Part Two," 53-54. Also see Dols, *Majūn,* 124-125.
[177] Dols, *Majnūn,* 171-172.
[178] Leiser and Dols, "Part Two," 54.

gloomy cells" and "bound like lions with chains around their necks,"[179] while the rest of the mentally ill were given freedom to move about and possibly in and out of the hospital. It appears that the Manṣūrī hospital believed that the sound of running water was soothing for the mentally ill, as all mentally ill patients were placed in the "rooms with the pool and wall fountains."[180]

The process by which the mentally ill were admitted to the hospital suggests that the Manṣūrī hospital seemed to cooperate with the government in setting regulations about disease in society, similar to the way the Nūrī helped set regulations about contagion:

> The local people immediately present such a [mentally ill] person to the governor, who issues an order placing him in the hospital [*bimarhane*] where they attend to his illness. They cannot place him in the hospital without this order because of the daily cost of one piaster. During our time, there were 306 ill and insane people in the Hospital of Qalā'ūn.[181]

This passage also suggests that the hospitals struggled with ethical dilemmas produced by financial limits which forced them to be selective in the diseases that they treated. It appears that in reaction to these financial dilemmas, protocols over who could benefit the most from being treated in a hospital were composed. As we saw, the struggle to set protocols over costs was also evident in Syrian hospitals. In many ways, such ethical dilemmas over who to treat give us an explanation as to why a hospital would ask 'Abd al-Waḥid to write a treatise on contagious diseases and incurable diseases. Contagious diseases, if not carefully regulated, could spread in hospitals, as well as from hospitals to the public, putting more financial strain on a hospital. Incurable diseases squandered the hospitals resources without benefiting the patient.

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[179] Ibid., 53.
[180] Ibid.
[181] ibid., 54.

In this regard, hospitals in Syria and Egypt were most likely under more financial strain and were not as open as Ottoman hospitals in Istanbul, who admitted any patient regardless of the disease at hand.[182]

Just as we saw with the Qaymarī hospital in Damascus, the Manṣūrī hospital functioned as a drug dispensary, manufacturing exotic and expensive medications.

> Various plants and animals that may not [even] exist in India are brought to Cairo from the Mountains of the Moon, Funjistan, Abyssinia, the Oases [of Egypt] and Upper Egypt; they are all in the first clime. The physicians use these medicinal products to treat the ill, and they are cured. Thus, the Hospital of Qalā'ūn in Egypt is famous among the Arabs and Persians and [among the people] in Anatolia.[183]

As a matter of fact, the Mānṣūrī hospital was famous in the Muslim world and Europe for its manufacturing of theriac, which during the 16th century had become a remedy for all types of diseases including pneumonia, pleurisy, syphilis, and leprosy. The theriac was a derived from poisonous reptile and numerous other herbal ingredients. Medieval Islamic physicians had modified the theriac of Galen, creating a wonder drug that was coveted by the Middle East and Europe. It was called *tiryāq* or al-*tiryāq al-Fārūq*.[184] It is hence not surprising that our very own author uses it to treat a case in which he thought death was eminent, and also compiled a treatise on the drug itself.[185]

Lastly, the Manṣūrī hospital continued to treat women,[186] which differed from Ottoman hospitals which only treated men.[187] There seemed to have been a greater

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[182] Ibid., 136.
[183] Leiser and Dols, "Part Two," 53-54. Also see Dols, *Majūn,* 124-125.
[184] This drug was only manufactured in Mānṣūrī hospital, in an annual celebration that gathered all the doctors. It manufactured and sold the drug to Europe and rest of the Middle East from as early as 13th century to as late as the 19th century. Many European travelers traveled to Egypt in attempt to attain this recipe, which according to Italian doctor Prosper Alpin, who visited Egypt in 1581-84, was far more successful than the European versions. Leiser and Dols, "Part One," 207-215.
[185] See the p. 24-5 in this introduction.
[186] Leiser and Dols, "Part two, " p. 54.

taboo towards a male physician treating a female patient than there was in the Arab Middle East. While it is most likely that women were seen by female physicians,[188] we have evidence of male physicians attending to females in our very own text as 'Abd Al-Wāḥid narrates one case where he treated a woman.[189] However, we should mention that we have no evidence that Syrian hospitals cared for women in the 16th century, even though we know they did so in earlier times.[190]

Alongside hospitals, as we saw in Syria, new charitable and distinctly Ottoman institutions, such as traveler's inns, public soup kitchens, and Sufi lodges, started to take on the burden of healthcare for the poor.[191] As a matter of fact, the other three hospitals in Cairo, were being run by Sufi confraternities.[192] However, we do not have adequate descriptions or studies elucidating what kind of treatment took place there. It is my guess that a combination of what we now call folk and Galenic medicine operated within the walls of these institutions.[193] This differs drastically from hospitals, which appear to strictly have followed humoral medicine. The increasing role played by Sufi

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[187] Shefer, 131.
[188] We have some evidence that the daughter of the Head of Physicians of Cairo, Ibn Al-Ṣā'gh al-Maṣrī(d. 1626), may have perhaps become the head physician at the Manṣurī hospital after his death. See Muḥibbī, op. cit., v. 1, 203. There is uncertainty because the text states that his daughter became "*Mashikha al-Tubb*," which could be a reference to a position in the hospital.
[189] See the Edition and Translation, p. 118.
[190] In the survey of primary litratury, I have yet to come across a case of women being treated in the Nūrī hospital.
[191] Leiser and Dols, "Part One," 206.
[192] Dols, *Majnūn*, 122.
[193] There was a wide array of medical pluralism that existed in Cairo and most likely across the Middle East. It ranged from the strict followers and students of humoral medicine who often worked in hospitals, governor's courts, and private clinics, to Prophetic Medicine, which was practiced by Sufis, often combining humoral and folk medicine(Leiser and Dols, "Part One," 199). As Dols suggests, these different medical practices were often blended and mixed, Galenic medicine was not exclusively practiced by the upper middle class, and the lower classes were not always the patrons of magical and religious healing (Dols, "Insanity and its Treatment in Islamic Society," 12).

institutions in providing healthcare to the poor explains why more hospitals were not built after the 15th century in Syria and Cairo.

While hospitals played many roles in society, such as providing medical training for future physicians, operating as a medical center for doctors to convene in, and setting standards in medicine and pharmacy, the motivation for their establishment in the Middle East, especially during Ottoman times, had always been to serve those who could not care for themselves. It is quite possible that hospitals in medieval Islamic society were never expected to be the solution to the city's health woes, but rather were built to address the health concerns of a specific population. As Shefer correctly identifies, the goal of the Ottoman hospital was to

> serve people who for a number of reasons could not take care of themselves: they might have lacked financial means, health and strength (physical and mental), and supportive family (through accident or distance).... Medical treatment and care were usually distributed with the family; hospitalization, then, signaled the absence or the dysfunction of a family. The function of the hospital institution together with or in addition to the family exemplifies the balance between supportive agents: family, the neighborhood, and the community at large.[194]

Hence, with traveler inns and Sufi lodges taking over this role, the motivation for any new kind of hospital establishment was greatly diminished. This does not, however, suggest that the hospitals that had already been established did not continue to play prominent roles in society, but rather that the need for more hospitals was not deemed a requirement in tackling the overall health needs of society. Hence, while the modern hospital tries to cure the greatest number of people at the lowest possible cost, "the

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[194] Ibid., 127.

Ottoman hospitals restricted their effort deliberately to a specific and small audience."[195]

While evidence has yet to be systematically collected and discussed in order for us to understand the social and economic standing of Egyptian physicians, it was probably similar to that of Syrian physicians, who, as discussed earlier, belonged to a wide socio-economic spectrum, ranging from the wealthy and esteemed physicians of the ruling to elite to the middle class physicians who constituted much of the hospital staff.

Conclusion:

In this study, we have seen many similarities between Damascus and Cairo in the practice of medicine and the role that hospitals and physicians played in society: In both cities the major hospitals (i.e. the Nūrī and Manṣūrī hospitals) were still leading centers of medicine in the Islamic world during the 16th and 17th centuries and both continued to play a role in setting medical and pharmaceutical standards, shaping society's perception of diease, participating in wider governmental public health initiatives, and taking care of the poor and the mentally ill. In both we also witness continued respect for humoral physicans by society. At the same time, I have presented evidence suggesting that the medical community in Cairo and Damascus was also undergoing some significant changes: financial limits forced them to think about ways in which resources could be most usefully spent; the opening of new opportunities in Istanbul gave many doctors incentive to travel after completing their training in Cairo

[195] Shefer, "Hospitals," 135.

or Damascus; and of most significance, the closure of smaller hospitals and the increasing role played by Sufi institutions in providing healthcare to the poor.

All in all, while the state of medicine in 16th century Cairo and Damascus cannot be said to be one of growth or progress, neither was it one of decadence and decline, as many scholars have generally assumed. Important medical texts of this period remain unpublished and unstudied, and a systematic history of the medical institutions, the social profile of physicians, and the diesaeses of concern, remain to be investigated. In many ways, the 16th and early 17th centuries merit special attention in the medical history of the Islamic world because it witnesses an important political transition with great social, economic, and cultural consequences: in 1516/1517 Sultan Selim I conquered Syria and Egypt from the Mamluks. The general idea in modern historiography is that both Syria and Egypt were in decline under the Mamluks and continued to decline under the Ottomans. The early Ottoman period in the provinces is generally little studied, so the validity of this perception requires some re-examination. Whether or not Islamic medicine in the 16th century was in decline or not should be embedded in a more general understanding of what happened during the 16th century, with the passage of Egypt and Syria (and soon thereafter the Arabian Peninsula, Iraq, and the Maghrib) at the hand of the Ottomans. What marked the transition in social and economic terms? In cultural terms? The study of Islamic medicine in the 16th century touches upon all these questions, a well as the larger elements of continuity and change before and after 1516/1517.

Conclusions Drawn from the Text

Since *The Pearls Regarding what is Necessary for a Hospital Administrator* is one of very few Arabic medical text studied in its time period, drawing any absolute conclusions from it is extremely challenging. In many ways, any deductions extracted from the text can only be taken as a foundation for more research. In the following section, I have attempted to use the text in order to focus on two larger issues: practice vs. theory in Islamic medicine; and the history of syphilis in the Middle East, on which I will offer some introductory notes.

Practical vs. Theoretical:

'Abd Al-Wāḥid Al-Maghribī's work embodies a much more practical (problem solving) approach to medicine. Many of the texts that have been studied in the field of Islamic medicine have been the theoretical works of famous physicians, while manuscripts that answer mundane problems, or public concerns, or those written by less well known physicians, have been neglected. As a result, for the most part only theoretical works have been used to gather information on medical practice in medieval Islam. However, as Alvarez-Millan correctly suggests, the accuracy with which theoretical medical works represent daily practice is questionable at best.[196]

In Greek medicine, there had always been a tension between a theoretical or dogmatic approach to medicine and an empirical one. Dogmatists formulated a priori principles and then deduced treatments from these principles, while empiricists placed

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[196] Christina Alvarez-Milan, "Practice versus Theory: Tenth –Century Case Histories from the Islamic Middle East," *Social History of Medicine* 13 (No. 2, 2000): 293.

their trust in observation and experience. As Dols suggests, "Islamic medicine inherited this intellectual contention, and it continued to evoke discussion. In Islamic medicine, however, the Dogmatists and the Empiricists were not two rival schools, but represented complementary orientations or emphases, both of which could be found in the works of Galen."[197]

The Pearls Regarding What is Necessary for a Hospital Administrator is a great representation of how the tensions between an individual's personal observations and his theoretical education can play out in a single discourse. Abd Al-Wāḥid Al-Maghribī's work reflects actual problems and diseases that confronted society, but is mixed with the authoritative texts from his theoretical studies. Throughout the manuscript we see examples of the author's own thoughts, reflections, and experiences, but they are always connected to authorities of the past.

The first indication of the empirical and practical nature of the treatise is the fact that it is written as a piece of advice for a hospital administrator who is confounded on how to deal with two phenomena: contagious diseases, and diseases that are incurable. Thus diseases are identified by their symptoms, as one would

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[197] "Although the ancient empiricist school of medicine may have survived at Gondeshāpūr or elsewhere and accompanied the revival of medicine under the 'Abbāsids, the massive translation of the Galen's work strongly discouraged this tradition. Christian and Muslim aversion to human dissection and to the crude empiricism of folkloric medicine further diminished its appeal. In addition, scientific experimentation was greatly limited by technical and philosophical factors. Yet empiricism persisted among educated doctors, especially among surgeons, such as Abū l-Qāsim az-Zahrāwī(d. ca. A.D. 1009) of Cordoba. The most famous is ar-Rāzī(d. A.D. 923), who exercised considerable influence in Islamic medicine. His empiricism came through clearly in his report of clinical cases and in his well known monograph on smallpox and measles. Recently, Felix Klein-Franke has emphasized the strength of the empirical tradition in Islamic medicine. According to him, medical study in Baghdad shifted from theoretical to an empirical orientation between A.D. 850 -1100." Dols, *Medieval Islamic Medicine*, 22

encounter them in a hospital, rather than by their humoral etiologies.[198] To take one example, leprosy in classical Arabic medical texts is often explained as a disease of "the melancholic humor (black bile) that is cold and dry and its excess in the blood,"[199] but this is not how our author identifies leprosy. Rather, leprosy is a disease that becomes incurable once the patient "develops harshness in his voice, flattening of his nose, falling out of his hair [and] eruptions throughout his body..." The concern is more with the patient's experience and whether he can recover, than with the nature of the disease itself.

It is significant to understand that, during that time, the physician's ability to predict when a patient was going to die was necessary for a prosperous career. It helped display his medical skills, proved he was not a charlatan, and protected his reputation.[200] In the hospital setting, it also saved the hospital financial expenses, since Islamic hospitals treated the poor for free. These incentives are clearly outlined by 'Abd Al-Wāḥid himself. Speaking of the ramifications of treating an incurable patient, he states:

> Some of them are: The manifestation of his lies to the people and the subsequent annihilation of trust in his actions and sayings; the wasting of his time and hard work without any positive results; the harming of his patients through the suffering of pain caused by drugs; the squandering of money without any benefit. Rather, the treatment of an incurable disease may turn a non-malignant disease into a malignant one. [Another result of such actions is] that the general public will stop believing in this profession (medicine).[201]

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[198] A similar observation is made about al-Rāzī's *Casebook* by Alvarez Milan. Alvarez-Milan demonstrates that in this work, al-Rāzī's identifies the disease of his patients by "the enumeration of symptoms," instead of a "theoretical point of view." See Alvarez-Milan, op. cit., 295.
[199] Dols, "Leprosy in Medieval Arabic Medicine," *Journal of the history of Medicine and Allied Sciences* 36(1979):
[200] Peter Pormann and Emilie Savage-Smith, *Medieval Islamic Medicine*, 55.
[201] See the edited text and translation, p. 91.

Additionally, his constant remarks about diseases that remain untreated and thereby become chronic conditions, as well as the stage at which diseases become lethal, are examples of the gloomy realities that physicians and hospital administrators dealt with on a daily basis. They had to know what they could do about a disease at the stage in which it was presented to them, details not always covered in theoretical training. This explains why our author mentions throughout the text the amount of days until a patient's death. It was valuable information that could be used by the hospital in predicting the amount of free beds available in the near future. As a matter of fact, from the text, we can draw the conclusion that a constant problem that plagued Egyptian society in the late 16th century was diseases that become chronic because they went untreated; this is especially the case with hernias, which, according to our author, happened more often in Egypt than other countries.[202]

Similarly, Abd Al-Wāḥid Al-Maghribī does not proceed into a theoretical exposé on contagion, even though it would have provided us with much coveted information, but rather lists the diseases that are contagious and mentions some precautions about the spread of such diseases when treated in a hospital. In this regard, he is clearly focused on results.

The diseases that the author mentions were problems in Egypt and Middle Eastern societies at the time, not random diseases he quoted from past works, as is often the case with theoretical works. Syphilis, elephantiasis, colic, diarrhea, ulcers, hernias, fevers, cataract, trachoma, and facial paralysis were all diseases that plagued

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[202] The 17th century Turkish traveler, Evliyā Chelebi, makes the same observation about Egyptian society. Chelebi believes the reason for this is because Egyptians eat a lot of food mixed with natron (a mineral used like salt). See Gary Leiser and Michael Dols, "Evliya's Celebi's Description of Medicine in 17thc. Egypt: Part One," *Sudhoffs Archiv 71*(1987): 204.

Egypt in the 16th and 17th centuries.[203] This explains why our author is not concerned with the bubonic plague. While it wreaked havoc on the Middle East in the fourteenth, fifteenth, seventeenth and eighteenth centuries, the sixteenth century enjoyed an epidemic remission.[204] It also explains why the author would take a page to discuss the ramifications of coffee on the body, which was introduced to Egypt at the beginning of the sixteenth century, and became greater than the spice trade by the end of it. It was a substance that society was in constant debate over.[205]

Alongside the fact that our author concentrates on the actual concerns of society, he also interjects many personal insights and experiences, such as his experiences treating patients or his personal remarks on certain diseases. This differs from many of the past medical works that have been studied, which are devoid of any personal experiences and case studies.[206] One of the best examples of his own insights is the following passage:

> I have mentioned [elsewhere] as to how to treat the anterior displacement of (two specific) vertebrae, but I have yet to state [how to treat] the lateral displacement of [the two specific vertebrae] and the vertebrae after them. If the displacement is simple, then a decrease in equitability of the limps will follow. If the displacement is severe, flaccidity (paralysis) will happen on one side, because of the pressure applied on the spinal nerves [by the displaced vertebrae], and rigidity on the other side due to the distention [applied to spinal nerves on the other side]. Whenever tension is placed on the vertebrae, rigidity follows. Each of these

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[203] Luckily, we have a picture of some of the diseases that plagued 17th century Egypt. See Leiser and Dols, "Part One," 202-4.

[204] D. Panzac, "Wabā'," *Encyclopaedia of Islam,* edited by P. Bearman et. al(Brill Online, 2008). Accessed 1/26/2008. <http://www.brillonline.nl/subscriber/entry?entry=islam_COM-1320>

[205] Andre Raymond, *Arab Cities in the Ottoman Period: Cairo, Syria and the Maghreb*, (Burlington, Vermont: Ashgate Publishing, 2002): 19. "Of the 200,000 quintals of coffee, exported by Yemen, about half (100,000 ql) transited through Cairo."

[206] A perfect example is the famous *Canon of Medicine* by Avicenna(d. 1037). For more information on the lack of personal observations in many of the studied Islamic medical manuscripts and the challenges this presents to researchers, see Peter Pormann and Emilie Savage-Smith, op. cit., 115-9.

> two situations are distressful by themselves, so how about if they happen together?[207]

However, while Abd Al-Wāḥid Al-Maghribī writes about diseases he is experiencing, he also strives to find examples from past authorities, most likely to lend his work more legitimacy. The ability of scholars to flaunt their knowledge of Hippocrates, Galen, and other authoritative figures helped them establish an authoritative tone and gain prestige. This inclination to cite Galen and Hippocrates has often been interpreted as an Arab tendency towards dogmatic and scholastic medical learning that is argued to later have stifled originality. However, we should be careful to assert this claim. Many scholars may have simply attributed certain ideas to Galen and Hippocrates as a way of stamping their own thoughts with an authoritative seal.

Second, similar to the different way prophetic sayings (*ḥadīth*) have been used over time in the Muslim world, the sayings of Hippocrates and Galen could have been interpreted differently over time. There is a possibility that each generation reformulated authoritative texts into new understandings that deceitfully challenged old notions, or at the very least put old notions into new contexts. We see this with Abd Al-Wāḥid Al-Maghribī who clearly lets his practical experiences dictate which authorities he quotes.[208] Within our author's voice, one can actually witness a tension between respect and reverence for past and ancient authoritative texts, and a desire to challenge and question their claims. He tends to float right in the middle, unsure of which direction he wishes to move towards.

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[207] The passage here is worthy of more investigation to see if it presents anything novel to what was known about cervical radiculopathy and disk herniation. See edited text and translation, p. 104.

[208] A similar pattern is demonstrated by Pormann in his study of Ya 'qūb al-Kaṣkarī's work. See Peter E. Pormann, "Theory and Practice in the Early Hospitals in Baghdad: Al-Kaṣkarī on Rabies and Melancholy," *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften* 15 (2003): 226

For example, when he is able to unexpectedly treat a young man with symptoms characteristic of pneumonia, he states that the patient's disease must not have been pneumonia, but rather an illness that "takes place from the organs of the chest, other than the lungs." His theoretical training taught him that if pneumonia or pleurisy advances to such a stage, the patient should have a fever and the disease is most likely incurable, but his experience this time did not conform to that which led him to conclude it must be a different disease.

However, this does not mean that 'Abd Al-Wāḥid Al-Maghribī always followed authorities' view points. For example, he specifically believes that cataracts cannot be treated, along with many of the complications of trachoma (entropion and ectropion, pterygium, and pannus). However, past Islamic and ancient physicians advocated various surgical techniques for treating these afflictions.[209] Couching as a treatment for cataract and peritomy as a treatment for pannus were occasionally practiced despite the immense pain they caused.[210] However, 'Abd Al-Wāḥid Al-Maghribī does not believe that their treatment is possible, and this is based solely on his experience. Interestingly, he quotes no authorities when speaking of eye diseases:

> Regarding the diseases of the eye that have no cure, they are: *Bayāḍ* (opacity of the cornea), long standing trachoma and pannus[211] as mentioned by Al-Rāzī[212], congenital lagophthalmos[213],

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[209] Peter Pormann and Emilie Savage-Smith, *Medieval Islamic Medicine*, 67, 125-8. For drug treatment of eye diseases see Emily Savage Smith, "Drug Therapy of Eye Diseases in Seventeenth Century Islamic Medicine: The Influence of the New Chemistry of the Paracelsians," *Pharmacy in History* 29(1987): 3-28.

[210] Ibid.

[211] A pannus was believed to be a complication of trachoma. It "was the invasion of cornea by the vessels from the limbus, a condition not described in Greek sources but called in Arabic *sabal* ('rain')." Pormann and Savage-Smith, 67.

[212] Abū Bakr Muḥammad ibn Zakarīyā' al-Rāzī(d. 925/313), known to Europeans as Rhazes, was was born in the Persian city of Rayy, and served as physician at the Samanid court in Central Asia. He is reported to have headed hospitals in Rayy and Baghdad. His writings and personal observations were assembled by his students and circulated under the name *Kitāb al-Ḥāwī fī al-ṭibb* (*The Comprehensive Book on Medicine*). See Emily Savage Smith, "Bibliographies," http://165.112.6.70/hmd/arabic/bioR.html (01-15-2008).

> cancer [of the eye], two layered pterygium[214], a truly arising pannus, epiphora (weeping discharge) upon birth, and chronic fistula lacrymalis.. The thickening cataract, if it is vitreous, thin, or thick, and its color is red, yellow, green, or black [is also incurable]. The thicker the cataract, the less likely a couching procedure will benefit the patient, and *I have not seen in our time a successful couching operation* [Italics mine]. [215]

Another example is colic, which 'Abd Al-Wāḥid Al-Maghribī believes to be incurable, but in past works was thought to be treatable.[216] A tension between using observation to dismiss authority, and using past authorities to guide one's interpretation of the observed is clearly present in his work. As matter of fact, the ease by which 'Abd Al-Wāḥid integrates his personal observations and theoretical education, raises the question of whether there actually was a dichotomy between dogmatism and empiricism in medicine, and whether the respect for authorities was truly an impediment to originality. This "tension" functioned much more like a reciprocal exchange or interaction, than a battle between two conflicting schools.

This interaction may be best illustrated when 'Abd Al-Wāḥid is speaking about the treatment of syphilis, a disease that the ancient scholars did not encounter. He states "the populace took for this disease, treatments that do not conform to the general rules, such as pills made of mercury. They made the sick swallow them, and perhaps this has benefited the patients."[217] Our author is unsure what to make of a medication that may actually work, but violates the rules of the humoral system

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[213] Entropion or ectropin (the eyelid turning inward or outward) were also believed to be a complications of trachoma. *Ibid.*

[214] Pterygium, "a triangular-shaped in growth of the conjunctiva onto the cornea" was also known as a complication of trachoma. Ibid.

[215] See edited text and translation, p. 100.

[216] For treatment of colic see Lena Ambjorn, *Qusṭā ibn Lūqā: On Purgative Drugs and Purgation* (Frankfurt, Germany: Institute for the History of Arabic-Islamic Science at the Johann Wolfgang Goethe University, 2004): 50-52.

[217] See edited text and translation, p 91.

because of its destructiveness. In order to justify its usage, he finds a precedent in the use of an uncustomary drug by the great physician Ibn Zuhr for the treatment of plague, under the justification that "the only [medication] that will prevail over it [plague] is that which is stronger than it in its destructive effect on the body."[218] If Ibn Zuhr is allowed to use such a drug for plague, then certainly mercury can be used to treat syphilis. 'Abd Al-Wāḥid's theoretical educational and personal observations complemented each other in advancing a non-traditional treatment for a new disease.

Two scholars have attempted to analyze the interaction between theory and practice in Arabic medical texts: Alvarez-Milan has demonstrated that in the case of al-Rāzī, his medical practice differed greatly from his theory, and that the theories expressed in his medical writing did not inform his practice, but rather were written to enhance his reputation.[219] On the other hand, Pormann discussed in his study of the physician Ya'qūb al-Kaṣkarī that al-Kaṣkarī's practice was "determined by his theoretical conceptualization of the diseases in question."[220] Unfortunately, most of the case histories that 'Abd Al-Wāḥid Al-Maghribī mentions are stories of untreatable diseases, making it difficult to assess how much theory or observation modified his treatments. It would be safe to assume that their role was intertwined, combining to different degrees the approaches taken by al-Rāzī and al-Kaṣkarī. Everyday experiences often forced a reformulation of 'Abd Al-Wāḥid's understanding of theory or a complete dismissal of it for particular disease, but he also often allowed the interpretations of his experience to be shaped by his theoretical education.

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[218] Ibid.
[219] Alvarez-Milan, op. cit., 293-306.
[220] Peter E. Pormann, "Al-Kaṣkarī," 199.

Lastly, this work also displays that works after the so called "Golden Age" were in fact new and original and incorporated personal observations, and were not didactic and scholastic copies of past works. Hopefully, with more studies of texts written during the 16th century, historians can paint a picture of how physicians in the late medieval and early modern period dealt with diseases that they encountered among patients, helping us comprehend how empirical observation was incorporated in 16th century Islamic medicine. To demonstrate how badly needed further studies in medical texts after the 16th century are, I am going to briefly discuss the case of syphilis, a disease introduced to the Middle East in the 16th century.

Contagion and Syphilis:

Compared to other medical concepts, the concept of contagion in medieval Islamic medicine has been well addressed.[221] Modern scholarship has for the most part come to the conclusion that "Islam refused to credit the notion that a disease could be transmitted directly from an ill person to a healthy one,"[222] and this conclusion has been mostly based on theologians' refutation of contagion based on the tradition of the Prophet Muḥammad stating that there is "no contagion." However, as Conrad has pointed out, the picture is not that clear. The evidence suggests both belief and disbelief in the concept of contagion. The ambiguity of feelings towards contagion can

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[221] Manfred Ullmann, *Islamic Medicine*(Edinburgh, Edinburgh University Press, 1978): 86-96; Lawrence I Conrad, ""Ṭā 'ūn and Wabā' : Conception of Plague and Pestilence in Early Islam," *Journal of the Economic and Social History of the Orient*, 25, No. 3(1982), 268-307; L.I. Conrad, "A ninth-Century Muslim Scholar's Discussion of Contagion," in *Contagion: Perspectives from Pre-Modern Societies*, ed. L.I. Conrad and Dominik Wujastyk(Burlington, Vermont: Ashgate Publishing Limited, 2000): 163-179; M. Dols, *The Black Death in the Middle East(*Princeton, N.J. : Princeton University Press, 1977); M. Dols, "The Second Plague Pandemic and Its Recurrences in the Middle East: 1347-1894" *Journal of the Economic and Social History of the Orient* 22, No. 2(May, 1979): 162-189.

[222] Conrad, "Discussion of Contagion," 163.

even be seen in the *ḥadīth*, where various conflicting statements about contagion are attributed to the Prophet.[223]

Islamic physicians adopted and elaborated upon the Galenic concept of contagion, explaining the transference of disease through the concept of miasma, which was the corruption of air by contaminants.[224] The major sources of contamination came from ditches, stagnant waters, piles of garbage, dead soldiers left out on the battlefield, and the dead corpses of those who had died from pestilence. They would release an evil vapor or malodor *(bukhār radī)*. If a human inhaled these vapors, they became ill if their natural disposition was already weak. Strong and healthy bodies were able to overcome these vapors and escape from disease.[225] Alongside miasma, there was also a belief in the concept of contagion by infection (person-to-person contact), suggested by physicians such as Ibn al-Khaṭīb during his experience with the plague. It was only natural that the firsthand observation of plague "would be to increase the belief in interhuman transmission of disease as opposed to miasma."[226] This controversy over infection versus miasma as the etiological mechanism of contagion continued well into the late nineteenth century; however, according to Dols, the miasmic theory continued to remain dominant throughout.[227]

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[223] Some examples of prophetic sayings that are pro contagion include: "The owner of sick animals should not drive them to the owner of healthy animals," and the saying, "If you hear that a plague has broken out in a country, do not go there; if it breaks out in a country where you are staying, do not leave." For an excellent analysis of the use of conflicting *ḥadīth* in the discussion over contagion, see Conrad, "Discussion of Contagion," 163-179.

[224] For an excellent review of medical interpretation of contagion and plague see Dols, *The Black Death*, 84-98.

[225] For more detailed review of the mechanisms of contagion, see Dols, *The Black Death*, 84-98. Also see Ulmann, op. cit., 89 and Dols, *Medieval Islamic Medicine*, 18-20 for brief summaries.

[226] Dols, *The Black Death*, 94.

[227] Ibid.

Theological explanations would evolve to contradict medical theories of an infected environment by claiming that all diseases came directly from God.[228] While this view existed early in Islamic history, presumably it was during the bubonic plague that this theological view would dominate Islamic society. Ullmann states that thereafter "bigotry and magic dissolved rational reflection with amulets and prayers...From now on there is no more room for Arabic authors for the idea of infection."[229] He suggests that Europeans would later reintroduce this concept back into the Middle East, which sounds implausible: it is unlikely that a concept as basic and important as contagion should all of sudden be forgotten and lost from Islamic medical thinking. Most scholars, of course, have not adopted Ullmann's assumption, but have contended that the theological refutation of contagion limited both the freedom of physicians to expound on more detailed discussions of contagion and the methods of prevention and treatment that society took against the plague.[230]

The problem, however, is that almost all works that have researched contagion have done so under the pretext of the plague (Justinian or Bubonic). No study addresses possible debates regarding the contagious nature of other diseases such as scabies, trachoma, syphilis, consumption, smallpox, phrenitis (*birsām*), diphtheria and measles, all of which may have been considered contagious.[231] Could it be possible that the theological denunciation of contagion was particular to the plague? Could it be that beliefs about contagion differed by disease?

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[228] The best review of theological arguments can be found in Dols, *The Black Death*, 109-121.
[229] Ulmann, op. cit., 96.
[230] Dols, *Plague in Early Islamic Society*, 382.
[231] Ulmann, op. cit., 88.

The only other communicable disease that has been relatively-well researched is leprosy,[232] for which modern research has not unearthed any evidence indicating disbelief in its contagion from theologians or the public. As a matter of fact, religious scholars thoroughly stressed the contagious nature of leprosy when it came to legal matters. For example, the famous religious scholar Al-Shafi'i (d. 204/819), in a legal discussion on the medical impediments to marriage, considers leprosy a contagious disease:

> According to what the men of medical learning and experience allege, leprosy will in many cases infect the spouse and is thus a disease dictating against sexual intercourse. Hardly any man's desire would lead him to enjoy sexual relations with a woman suffering from this disease, nor would a woman find it acceptable to have sex with a man suffering from this disease. As for the child, it is a manifest fact-but God knows best-that of children born to men or women who are lepers, few will be uninfected; those that do will see the disease pass on to their own children.[233]

Many precautions against the spread of leprosy have been documented in public health regulations in the *ḥisba* (market inspection) treatises, and lepers, if not quarantined, were at the very least limited from interacting with society.[234] As already mentioned, 16th century hospitals of Damascus are documented to have to given certificates to patients upon discharge verifying that they were not contagious.[235] This evidence,

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[232] M. Dols, "Leprosy in Medieval Arabic Medicine," *Journal of the history of Medicine and Allied Sciences* 36(1979): 314-33. M. Dols, "The Leper in Medieval Islamic Society." *Speculum*, vol. 58, No. 4 (Oct., 1983): 891-916.

[233] As quoted in and translated by Conrad, "Discussion of Contagion," 175-6. For more on leprosy and marriage law see Dols, "The Leper in Medieval Islamic Society," 897.

[234] "In Cairo in 660/1262 a certificate signed by three Muslim physicians confirmed that a certain man suffered from leprosy, and so could not circulate among the Muslims 'because that condition is a transmissible and communicable disease.'" See Conrad, "Discussion of Contagion," 176-7. For more laws aimed at preventing the spread of leprosy see Dols, "The Leper in Medieval Islamic Society," 907.

[235] Bakhit, op. cit., 134. For more on this, see the section on 16th century Syrian medicine.

along with the existence of leper houses across the Middle East,[236] which were used as means by which to quarantine the disease, indicates that society strongly believed in the contagious nature of disease, questioning the impact of the theological refutation of contagion when it came to leprosy. What could explain all of these ambiguities?

This brings us to the topic of syphilis. It has been studied little because it was a disease that was introduced into the Middle East after the "Golden Age" of Islam.[237] Other than the question of the origins of syphilis, the early European medical and social history of the disease has been less researched than its 18th, 19th, and 20th century history.[238] This is unfortunate since the study of syphilis may help clarify how Islamic society conceptualized contagion, as well as possibly elucidate any evolutions in the understanding of contagion. In light of this, I shall attempt to offer an introduction to the history of syphilis in the Middle East, but the scattered information on syphilis has yet to be thoroughly analyzed and so the following is cursory at best.

We owe the little that is known about syphilis in the Middle East to the study of Persian medical texts from 1500- A.D. -175-A.D., by Cyril Elgood.[239] According to him, the earliest source that mentions syphilis in the Savafid Empire is the work of the Persian physician Baha'-ul-Douleh, who wrote in 1501:

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[236] For more on Leper houses in the Middle East see Dols, "The Leper in Medieval Islamic Society," 907-916.

[237] Syphilis is believed to have been introduced to Europe from the New World, and from there spread to the Middle East and Asia. For a review of the debate over the origins of syphilis see Deborah Hayden, *Pox: Genius, Madness, and the Mysteries of Syphilis*(New York: Basic Books, 2003): 5-21. E. H. Hudson, "Christopher Columbus and the History of Syphilis," *Acta Trop.* 25, no. 1(1986):1-16. Olivier Dutour et al., *The Origin of Syphilis in Europe: Beofore of After 1493*(Paris: Editions Errance, 1993).

[238] Hayden, *Pox*, 11. For the early history of syphilis, see Jon Arrizabalaga, John Henderson, and roger French, *The Great Pox: The French Disease in Renaissance Europe*(New Haven: Yale University Press, 1997). Claude Quetal, *History of Syphilis* (Baltimore: John Hopkins University Press, 1990), 52.

[239] Cyril Elgood, *Safavid Medical Practice* (London: Luzac and Company limited, 1970): 23. For a translation of the text that Elgood has studied, see Cyril Elgood "Translation of a Persian Monograph on Syphilis," *Annals of Medical History* 3, 57 (London, September 1931): 405-486.

> I have observed a disease ... which is not described in any book ... This is the Armenian Sore which had its origin in Europe. From there it spread, to Constantinople and Arabia. In the year 904 A.H.(that is 1498 A.D.) it appeared in Azerbaijan. From there it spread through Iraq and Fars and many persons in these and other parts have had the disease and indeed still suffer from it.[240]

The Egyptian historian, Ibn Īyās(d. 1522 A.D.) make a similar report:

> A disease called "al-Ḥabb al-Ifranjī"(the Frankish chancre), God preserve us from it, spread amoung the people, the phsyicans being unable to cope with it, nor had it ever before appeared in Egypt except in the opening years of this century, and through it perished an untold number of people.[241]

We know that 'Abd Al-Wāḥid Al-Maghribī believed that syphilis was contagious, but unfortunately he does not offer us any details on the mechanism by which the disease is spread. His Persian contemporary, 'Imād al-Dīn Maḥmūd Shīrāzī, wrote a treatise on syphilis in 1569 A.D where he identifies sexual intercourse as the most common source of infection. But infection was also possible by coming into close proximity with the diseased, using the same razor, wearing the same clothes, kissing, and by bathing with the diseased. He writes that "the disease is not hereditary. If it occurs in a child, the infection is accidental."[242] Evliyā Chelebi writing later in the late 17th century also categorizes syphilis as a venereal disease.[243] A *Fatwā* written in Oman in the late 19th century prohibited men with syphilis from having intercourse with their wives to

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[240] As translated by Cyril Elgood, *Safavid Medical Practice*, 23. We should be thankful to Elgood for his study of Safavid Medicine, is the only systematic study of Middle Eastern medical texts after the 15th century. However, considering the fact no Arabic medical manuscripts of this period have been critically studied, we cannot be sure if this is in fact the earliest mention of the disease in the greater Middle East.

[241] R.B. Serjeant does not obtain this quote from Ibn Īyās's work but rather from a second hand authors who he does not mention. See R.B. Serjeant, "Notices on the 'Frankish Chancre' (Syphilis) in Yemen, Egypt, and Persia," *Journal of Semitic Studies* 10, 2(1965): 241-252.

[242] Ibid, 24.

[243] Lieser and Dols, "Part One," 205-6.

prevent the spread of the disease.[244] These descriptions suggest an understanding that the mechanism of contagion was more infectious than it is miasmic. This could present a shift from the miasmic view of contagion in Islamic medicine to a more infectious outlook, but more research is needed before such a conclusion can be properly supported.

Syphilis was not uniformly accepted as being a contagious disease, as evidenced by Evliyā Chelebi's description of syphilis in Egypt:

> ...they never worry [about the fact] that these particular diseases [syphilis] are contagious. In Egypt there is no *miskin haneler* (quarantine hospitals), but there are *miskin haneler* in other countries although they not allowed in the cities....The reason that this illness is very common in Cairo is that there is a tolerated [area at] Bāb al-Lūq, where prostitutes stroll about in droves.[245]

R.B Serjeant mentions one legal decree (*Fatwā)* that does not perceive syphilis as being contagious. [246] Considering this evidence, I am inclined to suggest the possibility that there may not have been a single Islamic stance on contagion, and that belief in contagion most likely differed by class, region, and disease. The refutation of contagion that scholars of Islamic medicine have so thoroughly examined and elaborated upon was most likely only present or strongest over the plague. This is only natural considering the severe social and political ramifications of the disease, which according to Dols had a far more damaging effect on Middle Eastern population than Europe.[247] Such a merciless epidemic necessitated a public response, and it was religious leaders

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[244] Serjeant, "Notices," 251.
[245] Ibid.
[246] Serjeant, "Notices," 243-4. .
[247] Dols, *The Black Death in the Middle East*, 4.

who "outlined normative behavior in the face of calamity."[248] Physicians in both Europe and the Middle East, despite recognizing the contagious nature of the disease, were unable to offer any effective solution. The fight against plague was much more of a moral battle, where theologians attempted to "reconcile men's suffering with the justice and mercy of God"[249] and offer prescriptions for communal behavior in time of plague.[250] It is possible to see why religious scholars and society may have refuted contagion for this specific disease as a means by which to fight moral chaos caused by fear,[251] but supported contagion when when it came to contagious diseases, such as syphilis and leprosy, that society could actually slow down.

As for the social history of syphilis in the Middle East, we have few clues on how society responded to syphilis, but it appears that the disease had considerable social and cultural consequences. According to Elgood, the ruling class developed phobias of this disease and went as far as refusing to shake hands with people.[252] Serjeant suggests that the disease evoked interesting legal discussions and that an examination of legal literature pertaining to syphilis would help us know more about the disease.[253] Evilya Chelebi's description of rampant syphilis in seventeenth century Cairo suggests a lack of fear. He writes

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[248] M Dols, "Plague in Early Islamic History," *Journal of the American Oriental Society* 94(No. 3, 1974): 382
[249] Dols, *The Black Death in the Middle East*, 9.
[250] For more information on the differences between Christian and Muslim attitudes towards plague, see Dols, *The Black Death*, 286-301.
[251] Dols makes the interesting observation that Muslim theologians' refutation of contagion with respect to plague allowed them to counter any waves of fear that might have lead to chaos. It "militated against the accusation of minorities. In no case is there a direct casual relationship to be found between Black Death (subsequent plague epidemics) and the active persecution of minorities, as in Europe," Dols, *The Black Death*, 296.
[252] Elgood, op. cit., 24.
[253] Serjeant, "Notices," 252.

> It is a disease [syphilis] that they call the "affliction of the *sugara.*" It is in the faces, eyes, and bodies of most of the poor and other people. Many men suffer from this malady. In Anatolia they call this illness the "Frankish affliction." In other words, this is a euphemism for the "Frankish itch." It is very common in Egypt, there is no shame [associated with it]. The peasants of Egypt mingle with men whose hands and feet have developed skin eruptions, and they say, "This is a *sugara* [in Arabic]."

The study of syphilis in the Middle East is interesting also because the medical understanding of the pathology of syphilis, as well as the treatments developed for it, indicate an interaction between European and Middle Eastern physicians in the 16th century. Our author states the following about the treatment of syphilis:

> The populace took for this disease treatments that do not conform to the general [Galenic] rules, such as pills made of mercury. They made the sick swallow them, and perhaps this has benefited the patients. Additionally creams made out of [mercury] and other ingredients, as well as incense [made of mercury] are [also used]. This treatment is not mentioned in the books of the ancient scholars, but I did find in Ibn Zuhr's *Treatment of Plagues*, the drinking the pigeons feces. And he said of what's meaning approximates to, "That this disease [plague] is nothing but utmost destruction and poisoning and that the only [medication] that will prevail over it is that which is stronger than it in its destructive effect on the body, and contains in it [the characteristics of the disease]."
>
> As to what will treat this disease [syphilis]: [one of] the gifts of the Indian wood, called Chinese small pearls. It is indeed amazing, and has no side effects (i.e. does not cause pain), unlike mercury, and I have been informed that its origins is the Chinese water lily.[254]

Two of our author's contemporaries, Dāwūd al-Anṭākī (d. 1599)[255] and 'Imād al-Dīn offer the same treatment for syphilis as our author.[256] "China root was a widely used European treatment for syphilis. It was a rhizome of a species of smilax (*Smilax china L.)*

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[254] See edited text and translation, p. 91.
[255] Pormann and Savage-Smith, *Medieval Islamic Medicine*, 170.
[256] Elgood, op. cit., 25.

native to eastern Asia, having steroidal sapogenins," [257] and its use in the treatment of syphilis is often used as one of the first signs of European medical learning in the Middle East.[258] Mercury, on the other hand, was part of an Arab treatment for scabies that was found to be effective for syphilis and introduced into Europe as early as the disease itself.[259] Even mercury vapors, as mentioned by our author, were used in Europe.[260] This preliminary evidence suggests an exchange of medical information between Europe and the Middle East in attempting to deal with syphilis. They apparently competed in the composition of the mercury pill, as is evidenced by 'Imād al-Dīn's assertion that his mercury pill was superior to the European one, which he believed had lethal concentrations of mercury.[261] Even the tension that we witnessed in our manuscript over the destructive side effects of mercury that breached the tenants of humoral medicine seemed to also be present in Europe.[262]

Unfortunately, the research ends here. Did the same confusion between syphilis and gonorrhea that happened in Europe also occur in the Middle East?[263] Could this explain the reference to the two types of syphilis that our author makes?

> In one form [of syphilis], the head [of the ulcer] is sharp (clearly defined), and its sounding body is small, and it heals quickly. In another form, the head [of the ulcer] is round, and its surrounding

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[257] Pormann and Savage-Smith, *Medieval Islamic Medicine*, 170.
[258] Ibid.
[259] " Luckily at the very beginning of the epidemic mercury was stumbled upon. People washed little in those days, and the secondary lesions rather resembled those of scabies, the treatment for which was a preparation introduced, according to Guy de Chauliac, by the Arab physicians, and called *Unguentum Saracenicum*. This, by a happy chance, contained a ninth part of mercury ; and used as an inunction it cleared up symptoms rapidly." See Abraham, J. Johnston, "The Early History of Syphilis," *The British Journal of Surgery*, Vol. 32, No. 126(October, 1944): pp. 229-230. Also see Hayden, *Pox*, 45.
[260] Hayden, *Pox*, 46.
[261] Elgood, op. cit., 25. For more on lethal concentration of mercury in European treatment of syphilis, see Hayden, *Pox*, 48.
[262] Ibid.
[263] For confusion between gonorrhea and syphilis in Europe, see Abraham, J. Johnston, op. cit., 331. See Hayden, *Pox*, XVIII. Serjeant is surprised that he "there is no mention of gonorrhea" in the few Islamic legal and medical texts he studied. See R.B. Serjeant, "Notices," 249.

> body is large, and it is difficult to get rid of, because of its association with destructive dense phlegm.

A number of worthwhile research questions about syphilis in the Middle East have been raised: How did physicians conceptualize, describe, and treat syphilis, and were there any evolutions in medical understanding of contagion in the face of this new disease? How did theologians, the elite, the poor, the middle class, perceive syphilis and what public health measures were taken against the disease? What was the stigma or shame associated with the syphilis? I only hope that the cursory evidence and questions mentioned here will encourage more research of neglected Arabic medical texts of the late medieval and early modern period.

Historiographical Considerations

The study of Islamic medicine after the 14th century is a topic that has been explored only sporadically by historians of Islamic medicine. Studies of Ottoman and Safavid medicine starting in the 15th century and beyond have been undertaken by a few scholars,[264] but medicine in the Arabic provinces of the Ottoman Empire has been for the most part neglected.[265] With the exception of the some Arabic editions of Dāwūd al-Antākī 's (d. 1599/1008 H) works,[266] there are no other critical studies of Arabic medical texts produced after the fifteenth century in Arabic or English. This is definitely not due to lack of primary sources, as many Arabic medical texts were produced following the fifteenth century.[267] The most important reason for this neglect is the fact that past scholarship portrays this as a period of decline, a low point in the

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[264] For studies on Ottoman medicine, see Shefer, "Physicians," 114-123; Shefer "Hospitals," 121-145; İhsanoğlu, "Last Episode," 12-46; İhsanoğlu, "Ottoman Educational and Scholarly Scientific Institutions," vol. 2, 361-519; İhsanoğlu, "The Ottoman Scientific-Scholarly Literature," vol. 2, 519-607. For Safavid Medicine, see Cyril Elgood, *Safavid Medical Practice*(London: Luzac and Company limited, 1970). While their works do cover medicine, and Elgood's study does include Persian medical texts, I still know of no critical edition of either a Persian or Turkish medical work that has been translated and published in English.

[265] An exception to this is Emily Savage Smith, "Drug Therapy of Eye Diseases in Seventeenth Century Islamic Medicine: The Influence of the New Chemistry of the Paracelsians," *Pharmacy in History* 29(1987): 3-28. However, she only studies the section of Ibn Sallūm's on eye diseases.

[266] Dā'ūd al-Antākī is often referred to as the last great Arab physician. His work has yet to be critically studied or translated into English. See his, *al-Nuzhah al-mubhijah : fī tashḥīdh al-adhhān wa-ta'dīl al-amzijah,*(Bayrūt, Lubnān : Mu'assasat al-Balāgh, 1999) and his, *Tadhkirat ūlī al-albāb wa-al-jāmi' li-i-'ajab al-'ujāb*(Frankfurt am Main : Institute for the History of Arabic-Islamic Science at the Johann Wolfgang Goethe University, 1997).

[267] For some Arabic medical works produced in 16th century see See İhsanoğlu, "Ottoman Educational and Scholarly Scientific Institutions," 574-80. For starters the following catalogues contains many Arabic works produced after the fifteenth century: Ramazan Sesen, Cemil Akpinar, and Cevad Izgi, *Catalogue of Islamic medical manuscripts (in Arabic, Turkish & Persian) in the libraries of Turkey*, (Istānbūl: Markaz al-Abḥāth lil-Tārīkh wa-al-Funūn wa-al-Thaqāfah al-Islāmīyah, 1984); Sami Hamarneh, *Catalogue of Arabic Manuscripts on Medicine and Pharmacy at the British Library* (Cairo : Les Editions universitaires d'Egypte, 1975): 224-242.

history of medicine where "nearly all traces of serious scholarship faded," especially in Syria and Egypt.[268] Defined as period of decline, the resulting impression is that late medieval and early modern Arabic medicine could not possibly contribute to developments in the history of medicine at large.[269] The present section will attempt to discuss the ramifications of this perception.

The Narrative of Decline:

Many historical narratives on the origins of modern science are Eurocentric in that they attempt to divide the world between West and non-West, attempting to construct science as a purely Western enterprise by "making a direct connection between classical Greek civilization and the modernity of Europe and bypassing Roman, Islamic, and medieval civilizations with impunity."[270] The marginalization of the Islamic contribution to medicine is a common theme throughout broader historical works, and will not be elaborated upon here.[271]

Eurocentric narratives unconsciously or consciously draw lines of exclusivity across loosely and ambiguously defined civilizations. This can be seen in two well-known theses that are closely related to each other: the Pirenne thesis and the "marginality thesis." The Pirenne thesis was expounded by the Belgian historian Henri Pirenne (d. 1935 A.D.) who advanced the idea that it was the Islamic conquests, rather

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[268] Emily Savage Smith, "Medicine," 955.
[269] The study of Byzantine science has been neglected by past scholarship for identical reasons. See Maria Mavroudi, "Occult Science and Society in Byzantium: Considerations for Future Research," in *The Occult Sciences in Byzantium, ed.* P. Magdalino and M. Mavroudi, (Geneva, Pomme d'Or, 2007).
[270] Saliba, George. "Seeking the Origins of Modern Science." *BRIIFS* 1, No. 2 (Autumn 1999). Accessed on March 28, 2006. <http://baheyeldin.com/history/george-saliba-1.html>
[271] Islamic medicine is marginalized in most grand histories of medicine. For example, see Roy Porter, *The Greatest Benefit to Mankind: A medical history of Humanity* (Now York: W.W. Norton and Company, 1997). Or see Erwin H. Ackerknecht. *A Short History of Medicine* (Baltimore : Johns Hopkins University Press, 1982). Lindsay Granshaw and Roy Porter, eds., *The Hospital in History* (New York: Routledge, 1989).

than the Germanic invasion of the Roman Empire, that ushered in the period known as the Middle Ages, ending the period of antiquity, and steering Europe into centuries of darkness.[272] As Garth Fowden states,

> Students of the pre-Islamic world have generally assumed that the new regime imposed by the Arab armies of Islam, from the 630s onward, finally strangled the more or less flourishing (or declining) life of the Roman and Sasanian East, and ushered in the end of antiquity.[273]

This contention runs into problems, when historians of science demonstrate that Islamic science drew much from the Greek and Roman sciences, and that many of "the most innovative mathematical and astronomical ideas that were employed during the European Renaissance were themselves borrowed from Islamic/Arabic or Chinese civilizations."[274] In response, the "marginality thesis" was advanced by many scholars to help explain the vast Muslim accomplishments in the sciences. The "marginality thesis," coined by Abdelhamid I. Sabra, contends that

> The scientific and philosophical activity in medieval Islam had no significant impact on the social, economic, educational and religious institutions; that this activity remained itself unaffected by these institutions, except when it was finally crushed by their antagonism or indifference; and that those who kept the Greek legacy alive in Islamic lands constituted a small group of scholars who had little to do with the spiritual life of the majority of Muslims, who made no important contributions to the main currents of Islamic intellectual life, and whose work and interests were marginal to the central concerns of Islamic society.[275]

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[272] Peter Brown, "Mohammed and the Charlemagne by Henri Pirenne," in *Society and the Holy in Late Antiquity*, ed. Peter Borwn(London : Faber and Faber, 1987): 63-71.

[273] *Garth Fowden. Quṣatr 'Amra: Art and the Umayyad Elite in Late Antique Syria(Berkeley: University of California Press, 2004): xxiii.*

[274] Saliba, "Origins."

[275] Sabra, A.I. "The Appropriation and Subsequent Naturalization of Greek Science in Medieval Islam: A Preliminary Statement."*History of Science* 25(1987): 223-43. Accessed(10/9/2007). <http://adsabs.harvard.edu/abs/1987HisSc..25..223S>
This idea can clearly be seen in David Lindberg's explanation of Islamic civilization's decline. Even though he argues that the "marginality thesis" is untenable, he basically adopts it in his explanation of decline:

Clear boundaries between East and West are thus drawn with such historical interpretations. As Maria Mavroudi points out:

> If we agree that the advent of Islam strangled the world of Graeco-Roman antiquity (regarded as the foundation of "Western" culture), this would imply that separate and different "Western" and "Eastern" identities took shape from very early on, at the very beginning of the Middle Ages.... It would also imply that Muslim civilization is not a true heir to the Graeco-Roman world (and therefore, indirectly, not a participant to an essential constituent of modern Western identity), but only its slavish imitator (through the 9th-10th century translation movement that was, according to this line of thinking, only a transfer of knowledge, to be further transferred West with the Arabic-to-Latin translation movement of the 12th century).[276]

Many historiographical and methodological errors are committed in the study of Islam and medicine because of such ideological pitfalls. In the context of the history of science, Muslim civilization is only seen as worthy of study because of its role as transmitter of Greek works to the fertile minds of the European Renaissance, where the Greek works were actually utilized. This has limited the study of science in Islamic civilization to the time period between the two great periods of translations, that from Greek to Arabic in the 9th century and that from Arabic to Latin in the 11th and 12th centuries.[277] After this date, Islamic medicine is argued to have fallen into decline.[278]

> In assessing this collapse, we must remember that at an advanced level the foreign sciences had never found a stable institutional home in Islam, that they continued to be viewed with suspicion in conservative religious quarters, and that their utility (especially as advanced disciplines) may not have seemed overpowering. Fortunately, before the products of Islamic science could be lost, contact was made with Christendom, and the process of cultural transmission began a new. See David C Lindberg, *The Beginnings of Westren Science: The European Scinetfiic Tradition in Philosphical, Religious, and Institutional Context, 600 B.C. to A.D. 1450.* (Chicago: Univeristy of Chicago Press, 1992): 173-4, 181-2.

[276] Maria Mavroudi, "An Ummayad Bath and its Cultural Background: Review of Garth Fowden's *Qu Ayr Amra: Art and the Ummayad Elite in Late Antique Syria*," *Journal of Roman Archeology* 19, fasicule 2(2006): 737.

[277] I discuss the narrative of translation in more detail later on. For more on this historiographic error see J. L. Berggren, "Islamic Acquisition of the Foreign Sciences: A Cultural Perspective." *The American*

According to Mohamad Abdalla, the theory of decline has been advocated since the 19th century. Some of the earliest scholars to advocate the theory of decline are Joseph Ernest Renan (1823-1892), and Max Weber (1864-1920), who claimed that the reasons for decline were the deficiency of Arab mind for rational thought.[279] Similarly, George Sarton (1884-1956) believed that Islamic sciences went into decline because the Muslims had reached the limit of their development. [280] Continuing into the twentieth century, the theory of decline started to be expressed in less contemptuous a fashion. Modern scholarship, however, still stresses culture and religion as the primary reason for decline. For example, David C. Lindbergh claims decline was generated by the fact that Islamic science lost "its alien quality and finally [became] Islamic science, instead of Greek science practiced on Islamic soil."[281] While Toby Huff in a more scholarly fashion lists various religious, legal, and cultural factors of the decline, he emphasizes the dominant role played by religious thought in the stifling of the sciences.[282]

The theory of decline meshes well with a second historiographical error that makes the mistake of judging the value and contribution of the sciences of other cultures by the standards of modern science and later Western achievements, "passing

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Journal of Islamic Social Sciences 9, no. 3 (1992): 311. For parallels in the historiography of Byzantine science, see Maria Mavroudi, "Occult Science and Society in Byzantium," 28.

[278] Most scholarship on Islamic medicine dates the decline to be around the 11th or 12th centuries; exceptions to this are reviewed on p. 31-33.

[279] Mohamad Abdalla, "Ibn Khaldun on the Fate of Islamic Science after the 11th century." *Islam and Science* 5(Summer 2007): 62.

[280] Ibid., 63.

[281] *The Beginnings of Westren Science:The European Scinetfiic Tradition in Philosphical, Religious, and Institutional Context, 600 B.C. to A.D. 1450.* (Chicago: Univeristy of Chicago Press, 1992), pp. 180-182.

[282] The emphasis on religion as a reason for decline is evident throughout his work; see Toby E Huff, *The Rise of Early Modern Science: Islam, China, and the West* (New York: Cambridge University Press, 1993). For one blatant example, see footnote 2 on page 47, where Huff claims that a reason for a decrease in free thought in the Islamic world was the increased conversions to Islam. He basically blames Islam as the reason for the non-existence of any cities such as Hong Kong or Tokyo in the Muslim world today.

over other features of those same sciences in total silence."[283] As Sholmo Pines points out, the history of science runs into many problems because, "in assessing scientific achievements of the past, it tends to judge their value by similarity or opposition to the conceptions of modern science."[284] Scientific achievements of the past that we are unable to connect to later European accomplishments are marginalized and unfortunately their historical implications and meanings are ignored. Hence, if Islamic medicine declined after the Golden Age, then the study of Arabic medical texts after this decline becomes insignificant. It could not have had a positive impact on European medical development, and thereby is incapable of contributing to the grand narrative of modern medicine or science.[285]

The story of the scientific exchange between the East and West summed up perfectly by Maria Mavroudi:

> The sciences were born in the ancient Near East, whence already in antiquity they migrated West, among the Greeks, who gave birth to (Western) philosophy and made it and science flourish until (at the latest) the sixth century A.D. At around that time science and philosophy died out in the Greek-speaking world. Thankfully, they were rescued by the Arabs, who translated and adapted the Greek scientific and philosophical heritage as a result of the translation movement from Greek into Arabic in the course of the ninth and tenth centuries, and went on to produce some worth-while science and philosophy of their own. By the eleventh century both subjects were beginning to decline in the Muslim world, but again, were rescued by medieval Europe, where a second translation and adaptation project, this time from Arabic into Latin, was launched in the twelfth century. It is understood that from

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[283] Saliba, "Origins."
[284] As quoted in Berggren, op. cit., 311.
[285] In order to dismiss the scientific activity after the decline, many scholars simply claim that after the "Golden Age" of Islam, all scientific activities were dogmatic replications of the past. For example, Aydin Sayili, a Turkish scholar (1913-1999), did not consider Ottoman science that began in the 14th century as a subject worthy of research, because he perceived Ottoman science to be a dogmatic follower of the Arabic and Persian traditions. See Ekmeleddin İhsanoğlu, "Introduction," in *Science, Technology, and Learning in the Ottoman Empire*: Western influence, local institutions, and the transfer of knowledge (Burlington, VT: Ashgate/Variorum, 2004): Viii.

> then on, and down to our own times, science and philosophy definitely and irrevocably migrated west. Their initial twelfth-century migration was intensified in the course of the fourteenth and the fifteenth centuries, when Greek refugees fleeing Byzantium arrived to the West carrying manuscripts of ancient authors and allowed the West to rediscover ancient Hellenic wisdom, this time without an Arabic intermediary. The Greek manuscripts brought to Europe by Byzantine scholars during the Renaissance are understood as *the last contribution* of the East (whether Arabic or Greek speaking) to Western scientific and philosophical development [Italics Mine].[286]

After this "last contribution," only European medical influence on the lands of Islam was possible, and worthy of study. As a matter of fact, the study of Arabic medical works after the fifteenth century has only elicited some attention in an attempt to show the first signs of European medical learning in the Middle East.[287] The level of exchange between Europe and Middle East after the Renaissance is assumed to have operated in only one direction because of the belief in the decline of the Islamic medicine, as well as the "assumption of the almost completely autonomous growth of modern science from that period on."[288] Within this narrative, it is significant to recognize that there is also an inherent assumption that Europe could not have contributed to the development of medical or scientific knowledge to the Middle East before the Renaissance, and hence research in this area has also been neglected.

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[286] Mavroudi, "Occult Science and Society in Byzantium, 28.

[287] Much of the work done on Ottoman science concentrates on European influences on science in the Ottoman Empire. See Ekmeleddin İhsanoğlu, *Science, technology, and learning in the Ottoman Empire;* Ekmeleddin Ihsanoglu, Kosta Chatzis, Efthymios Nicolaidis(eds.), *Multicultural Science in the Ottoman Empire(*Belgium: Brepols Publishers, 2003); Ekmeleddin Ihsanoglu, Ahmed Djebbar, and Feza Gunergun(eds.), *Science, Technology, and Industry in the Ottoman World* (Belgium: Brepols Publishing, 2000); Emily Savage Smith, "Drug Therapy of Eye Diseases in Seventeenth Century Islamic Medicine: The Influence of the New Chemistry of the Paracelsians," 3-28. While the few existing studies are a much needed starting point for further research, manuscripts that do not possess evidence of European influence are not examined.

[288] Geroge Saliba, "Whose Science is Arabic Science in Renaissance Europe?" 1999, Section 3, p. 1. Accessed 10/9/2007. < http://www.columbia.edu/~gas1/project/visions/case1/sci.1.html>

An Alternative Approach:

As research progresses, scholars have began to question this narrative. Not only has the date of decline been progressively pushed back with new scholarship,[289] but recently, the idea of any type of uniform decline has been challenged by scholars such as Abdelhamid Sabra and George Saliba. While Sabra contends that there was a decline, he rejects general theories of decline, arguing that it is impossible to assign a date to decline, because the Islamic Empire covered such a large geographic plane,[290] and decline in one branch of science did not mean decline in the other branches, and that much more research is needed before general conclusions can be reached.[291]

George Saliba rejects the idea of a uniform decline and the common explanations for that decline. To Saliba, new micro-histories are raising questions about the grand narrative of the history of science.[292] Citing evidence of Arabic scientific learning in Europe as late as the sixteenth and early seventeenth centuries, especially in the field of astronomy, he raises a number of questions regarding the origins of Renaissance science. The direction of scientific ideas from the lands of Islam to Europe at such a surprisingly late date not only questions the theory of decline, but also questions the utility of cultural borders in defining and delimitating sciences.[293] To Saliba, "Arabic/Islamic science did not so much decline as lose the scientific race owing to the injection of unimaginable new economic resources into European courts (to the exclusion of courts in the Islamic world)," as the "subsequent Age of Discovery and

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[289] Examples of this scholarship in the field of medicine have already been reviewed. See page
[290] For more on problems presented by the huge geography of Islamic science see A. I. Sabra, "Situating Arabic Science: Locality versus Essence," *ISIS* 87(1996): 654-670.
[291] For a good review of Sabra's work see Abdalla, "Thesis," 64.
[292] Saliba, "Whose Science is Arabic Science in Renaissance Europe," Section One, 1.
[293] Ibid., Section Two, 4.

ensuing colonial and imperial adventures almost certainly enriched European courts to an exceptional degree and permitted them to patronize European scientists, artists, philosophers, and so on at an unprecedented level."[294] In a similar light, Ahmad Y. Al-Hassan postpones the date of decline until after the 16th century, claiming that science flourished between the thirteenth and sixteenth centuries. He also rejects the common theories for decline, and identifies the loss of political stability and weakening of trade as the main reason for decline.[295]

In light of the above, I would like review some scattered evidence in historical literature that may suggest a late Islamic contribution to medicine in the sixteenth and seventeenth centuries. I have already spoken of the great lengths that Europeans went to try to attain the recipe for the famous Egyptian theriac in the sixteenth and seventeenth centuries and of the possible collaboration between European and Middle Eastern physicians on the understanding and treatment of syphilis. Let us now consider a few other examples.

Andrea Alpagos (d. 1520) from Belluno, Italy spent thirty years in Syria, studying Islamic medical texts and translated many Arabic medical works into Latin, including some of the work of Ibn al-Nafīs, who was the first physician to describe the pulmonary movement of blood.[296] These Latin translations made their way to the works of sixteenth century physicians, Miguel Servetus (d. 1553) and Renaldo Colombo (d. 1590, where they give "a presentation of the lung circulation which resembles Ibn-an-Nafīs

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[294] George Saliba, "George Saliba: Flying Goats And Other Obsessions - A Response to Toby Huff's Reply." *BRIIFS* 4, no 2 (2002), pages unknown. Accessed 10/92007. <http://baheyeldin.com/history/george-saliba-2.html >

[295] Ahmad Y. Al-Hassan, "Factors behind the Decline of Science after the sixteenth century," in *Islam and the Challenge of Modernity: Historical and Contemporary contexts,* ed. Sharifa Shifa al-Attas (Kuala Lumpur: International Institute of Islamic thought and Civilization, 1996): 351-391.

[296] Abdulla, "Thesis," 207

so strongly that one can hardly reject a direct influence."[297] From there, Ibn al-Nafis's understanding of the pulmonary circulation fell into hands of William Harvey, who expanded upon it in 1628.[298] While it is true that the Ibn al-Nafis's discovery of the pulmonary circulation is not equivalent to William Harvey's more advanced idea of continuous circulation,[299] it is clear that William Harvey's proposition could not have been formulated without a combination of Islamic and European medical ideas. Further the indisputable connection between the ideas of Ibn Nafis and Harvey demonstrates that Arabic medicine informed aspects of European medicine up until the late 16th and early 17th century.

It is also significant to ask why a European physician such as Andrea Alpagos would seek medical training in Arab lands if the state of medicine was truly one of utter decline. He was not an isolated example, but rather part of a greater phenomenon. Thanks in part to the safe haven offered to European merchant communities in Ottoman provinces, many Europeans ventured to Syria and Cairo in search of manuscripts and to learn Arabic.[300] According to G.J. Toomer, not only was the learning of Arabic widespread in the 16th and 17th centuries, but some of the most prominent Arabists in Europe were physicians or astronomers.[301] Further, some 940 Arabic copies of Avicenna's *Cannon* were sold around the late 16th century,[302] as "considerable interest grew in consulting the original Arabic texts rather than the corrupt medieval Latin

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[297] Ullmann, *Islamic Medicine*, 69.
[298] For reviews of the scholarship on Ibn Nafis and the discovery of pulmonary circulation, see Abdulla, "Thesis," 207. Saliba, "*Whose Science is Arabic Sceince in Renaissance Europe,*" Section Three, 2.
[299] Pormann and Savage-Smith. *Medieval Islamic Medicine*. 47-8.
[300] G.J. Toomer, *Eastern Wisdom and Learning: The Study of Arabic in Seventeenth-Century England*, Oxford: Clarendon Press, 1996): 16.
[301] Ibid.
[302] Saliba, "Whose Science is Arabic Sceince in Renaissance Europe," Section 4: 6.

translations."[303] The well documented fact that European universities integrated Arabic classes into the medical curriculum,[304] as well as statements such as "Avicenna says more on one or two pages than does Galen in five or six large volumes,"[305] by Guilaume Postel(d. 1581) suggests the prestige that knowledge of the Arabic language was invested with in medical education.

Islamic influence on European medicine can also be seen in the discovery of inoculation, which was introduced to England by the Lady Mary Wortley Montagu in 1721, after she witnessed it in Turkey in 1717. [306] She writes in one of her letters:

> A propos of distempers, I am going to tell you a thing that will make you wish yourself here. The small-pox, so fatal, and so general amongst us, is here entirely harmless, by the invention of engrafting, which is the term they give it. There is a set of old women, who make it their business to perform the operation, every autumn, in the month of September ..... I am patriot enough to take the pains to bring this useful invention into fashion in England, and I should not fail to write to some of our doctors very particularly about it.[307]

The interest in inoculation actually led to the investigation, translation, and publication of al-Rāzī's treatise on small-pox and measles,[308] indicating an interest in Islamic medicine through the 18th century. Islamic pharmacology continued to exert an influence on European pharmacopoeias until the beginning of the 19th century. [309]

Conclusion:

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[303] G.J. Toomer, op. cit., 16.
[304] G.J. Toomer, op. cit., 18, 113.
[305] Guilaume Postel (d. 1581) as quoted in George Saliba, "Whose Science is Arabic Sceince in Renaissance Europe," Section 4: 6.
[306] Lady Mary Wortley Montagu *(1689-1762)*, "Smallpox Vaccination in Turkey," in *Modern History Sourcebook*. Accessed 9/20/2007. < http://www.fordham.edu/halsall/mod/montagu-smallpox.html >
[307] Ibid.
[308] Emilie Savage-Smith, F. Klein-Franke and Zhu Ming, "Ṭibb," *Encyclopaedia of Islam*, ed. P. Bearman et al(Brill Online, 2008). Accessed 1/27/2008. <http://www.brillonline.nl/subscriber/entry?entry=islam_COM-1216>
[309] Ibid.

While the evidence surveyed here requires further research, it does provide reason to hesitate before hastily labeling the 16th -18th centuries as a period unworthy of study. It suggests that the 15th, 16th, and early 17th centuries perhaps represented centuries of exchange between the Middle East and Europe in the field of medicine. If true, it would call into question the autonomous development of European medicine after the Renaissance, as well as reformulate our understanding of the decline of Arabic sciences. It would force us to ask whether certain achievements in science should be solely regarded as achievements of "Western" culture, or if it is to be extended to other cultures, where many ideas may have originated and were later further developed by Europeans.

It is unfortunate that only a handful of Arabic medical works written after the 15th century have been critically edited and studied, especially since further research is needed before the narrative of decline can be accepted or definitively rejected. Even if the 16th -18th centuries proves to be a period of decline, it is still important to understand the local theory and practice of medicine in the 16th-18th centuries and view it within its social and political circumstances.

My study contributes to reaching three important larger goals: First, it helps address the dire need for critical editions of medical texts, expanding our knowledge of Arabic medicine in the Early Ottoman period. Secondly, it helps understand different scientific activities in the Arabic provinces of the Ottoman Empire, and whether that activity was one of decline, mediocrity, or greatness. Third, it allows us to investigate the possible networks of learning between Middle Eastern and European physicians.

Of course, a single study, such as this one, does not suffice in order to assess the state of medicine at the time, nor does it sufficiently describe the medical community in Syria or Egypt in the late 16th century. It is but a small piece belonging to a significantly larger puzzle that we have not even begun to put together.

Edition and Translation

The Pearls Regarding What is Necessary for a Hospital Administrator,

by Al-Shaykh Abd Al-Wāḥid Al-Maghribī.

In the name of God, the most Beneficent, the most Merciful, and in Him we trust. Praise due to the One who through his wisdom has bestowed insight on his loved ones, and made apparent in his blessings, the gift of medicine, which he has bestowed with the power to cure misfortune [scourge, plague], and inspired the use of medicine to those whom he selected to treat the diseases that are curable by his decree.

Prayers and peace be upon our Lord Muḥammad, the best of God's prophets and messengers, and [peace and blessings] be upon his family, companions, and the rightly guided by his (the prophet's) guidance.

Thereupon, our lord, the exceptional, distinguished, and great prince, the unique and foremost expert in his time of the honored predecessors in accounting and bookkeeping,[2] the most eminent and honored authority, Ḥusayn bin Muḥammad, the administrator of the *Manṣūrī* Hospital,[3] asked

عقود الجمان فيما يلزم (من) ولي البيمارستان[1] للشيخ عبد الواحد المغربي والحمد لله وحده م

بسمِ اللهِ الرحمنِ الرحيمِ وبه نستعينُ. الحمدُ للهِ الذي نوَّرَ بحكمتهِ بصائرَ أحبائه، وأظهرَ بنعمتهِ الأدويةَ التي أودعَ فيها الشفاءَ من بلائهِ، وألهمها لمن اختارهُ لمعالجةِ الأمراضِ التي يمكنُ برؤها بقضائهِ.

والصلاةُ والسلامُ على سيدنا محمد أفضلِ رسلهِ وأنبيائهِ وعلى آلهِ وأصحابهِ والمهتدينَ بهدائهِ.

وبعد، فقد سألني مولانا الأميرُ الأمجدُ والسيِّدُ الجليلُ الأوحدُ، سلافةُ السلفِ الكرامِ وفريدُ الدهرِ في الضبطِ والأرقامِ، مولانا السيِّدُ الشريفُ حسين بن محمد ناظرُ البيمارستانِ

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[1] أعتقد ان الكاتب نسى "من" في هذا العنوان و العنوان الصحيح يظهر بعد قليلاً في النص ، ويتوافق مع اسم النص الموجود في الفهارس.

I believe that the scribe accidentally omitted "*min*" from the title here. The correct title appears later in the text, and corresponds to the name of the text found in catalogues (see the Introduction, pp. 11-13).

[2] Sulāfa means the "choicest of wines" which here is used to indicate the best of the best, and in this context the best exemplar of past scholars in the field of accounting and bookkeeping.

[3] Bīmāristān al-Manṣūrī was established in 1284 A.D. by the Sultan Manṣūr al-Qalāwūn. It was the most renowned hospital in the Middle East from time of its establishment till the 17th century. For more

المنصوري، سقا الله تعالى ضريحَ واقفهِ وأبلّ الرضوانُ، وأسكننا وإيّاهُ والمسلمينَ فراديسَ الجنانِ بجاه محمد صلى الله عليه وسلم سيِّدِ ولدِ عدنان، أن أجعلَ رسالةً لطيفةً تَشْتَمِلُ على ذكْرِ غالبِ الأمراضِ التي لا يمكن برؤها والتي تعدو ويتعدَّى إلى أكثرَ من اثنينِ ضررُهَا.

فأجبتُ سؤالَهُ بعد الاستخارةِ راجياً من الله ثواباً، ورتبتُها فصولاً وأبواباً وسميّتها عقد الجمان فيما يلزم من ولي البيمارستان وعلى الله الكريمِ اعتمادي وإليه تفويضي وإسنادي ه ا[6]

me to produce a short treatise concentrating on the majority of diseases that are incurable, and [on diseases] that are contagious[4]; its harm spreading to more than two people. May God the Exalted shower his grave and afterlife with mercy, and to place him, us, and the Muslims in highest level of paradise, by the intercession of Muḥammad, peace and blessings be upon him, the leader of the descendents of ʻAdnān.[5]

So I answered his question after asking God for guidance and hoping for His reward. I organized the treatise into chapters and parts, and I named it "The Pearls Regarding What is Necessary for a Hospital Administrator." And in God, the Generous, I rely, trust, and depend.

البابُ الأوَّلُ

البابُ الأولُ في ذكْرِ ما يلزمُ الطبيبُ معرفتَهُ وفيه فصلان، الفصلُ الأولُ في تقسيمِ الأسْقامِ وذكْرِ جملةٍ من أقوالِ الحكماءِ الكرامِ. الفصلُ الثاني في ذكْرِ الأمراضِ المعديةِ والنصائحِ الوافيةِ.

Part One

The first part is on the basic knowledge a doctor must have; it has two chapters. Chapter one is on the classification of diseases and a compilation of the sayings of the honorable doctors. Chapter two is on contagious diseases and reliable [medical] advice.

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information on this hospital and others see the introduction, pp. 1-7. The most thorough history of the Manṣūrī hospital can be found in Aḥmad ʻIsā, *Taʼrīkh al-Bīmāristānāt fi al-ʻIslām* (Damascus: al-Maṭbaʻat al Hāshimiyah, 1939):66-171.

[4] Manfred Ulmann suggests that the word *ʻadwā* and *iʻadā* would be better translated as transmission or transmissibility. There was no conceptual distinction between infection and contagion, and the same word was often used to refer to hereditary diseases. I have decided to keep the translation as is because our author uses a different word for hereditary diseases later on. See Manfred Ullmann, *Islamic Medicine*(Edinburgh, Edinburgh University Press, 1978): 87.

[5] ʻAdnān is the name of the "legendary ancestor of the North Arabs." Hence the sentence here can also be understood as the leader of Arab Civilization.

[6] علامة الترقينَ المستخدمة هنا لا تظْهر في أي مكان آخر في هذا النص.-- The punctuation mark used here does not appear anywhere else in the text.

Chapter One: On Categories.

Let it be known that diseases can be divided into two categories. In the [first] category of disease, recovery is possible and the disease is curable. [When it comes to such a disease], it is incumbent upon the physician to fully and continuously exert himself in its treatment, using all the different types of therapies.

The [second] category of disease can not be cured, and the skillful physician must do nothing except convey the news, because recovery from the disease is hopeless. If he treats the patient, and transgresses against the teachings of the ancient scholars, he commits many unjust acts.

Some of them are: The manifestation of his lies to the people and the subsequent annihilation of trust in his actions and sayings; the wasting of his time and hard work without any positive results; the harming of his patients through the suffering of pain caused by drugs; the squandering of money without any benefit. Rather, the treatment of an incurable disease may turn a non-malignant disease into a malignant one. [Another result of such actions is] that the general public will stop believing in this profession (medicine).

الفصلُ الأولُ في التقسيمِ

ليُعلَم أنَّ الأمراضَ تنقسمُ إلى قسمين. قسمٌ منها يمكن برؤه وشفاه، يتعيّنُ على الطبيبِ فيه صرفَ المجهودِ في علاجِهِ بكلِّ طريقٍ من طرقِ المعالجاتِ.

وقسمٌ لا يمكنُ برؤهُ وهذا لا يلزمُ الطبيبُ الماهرُ سوى الإخبارِ بأنه ميؤوس[7] البرءِ فقط، فإن[8] هو عالجهُ وخالفَ كلامَ المتقدمين فإنَّهُ يرتكبُ مفاسدَ كثيرةً.

منها: ظهورُ كذبِهِ عندَ الناسِ وعدمُ الوثوقِ بقولِه وفعلِه، ومنها تضييعُ زمنِه وتعبُهُ من غيرِ نتيجةٍ، ومنها تعذيبُ المرضى بمقاساة[9] ألمِ الأدويةِ، ومنها تضييعُ المالِ من غيرِ نفعٍ، بلْ ربَّما أدى علاجُ المرضِ المايوسِ الشفاءِ إذا كان غير قتّالٍ إلى حدوثِ مرضٍ قتّالٍ، ومنها تكذيبُ العامةِ هذه الصناعةَ.

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[7] حسب نسخة المخطوط: "مايوس" وهي مهجئة على هذا النحو في كامل النص. -- The scribe consistently spells *may'ūs* (hopeless/desperate), *māyūs* throughout the text.

[8] هنا تجدر الملاحظة أن اكاتب شطب كلمة "فإنما" واستبدلها بكلمة "فإن." -- The scribe here crossed out *fā'inamā* and replaced it with *fā'in*.

[9] حسب نسخة المخطوط: "مقاسات." – The word was spelled *maqāsāt* in the text.

For this [reason] the scholar Hippocrates[11], may God the Exalted have mercy on him, said, "It is from the best of practices for a doctor to use a thorough analysis. So when he approaches the patient, he warns him of his present state, of what is wrong with him, what has passed, what is going to follow(i.e. his prognosis), and expands upon whatever short comings his patient makes in describing his condition. [Such an approach] is more appropriate [than any other] because [the patient] will put his trust in him."

ولهذا قالَ الإمامُ أبقراط رحمهُ اللهُ تعالى: أنه من أفضلِ الأمورِ أن يستعملَ الطبيبُ سابقَ النظرِ، فلو أنَّهُ إذا تقدَّمَ فأنذرَ المريضَ بالشيءِ الحاضرِ مما به وما مضى وما يستأنفُ وعبّر عن كلِّ ما[10] قصَّرَ المريضُ عن وصفه كان حرياً بأن يُوثَقَ به.

[Hippocrates] also said, "It is impossible for the doctor to cure all of his patients." He also said, "It is incumbent upon the physician to approach and warn the death of whosoever is going pass away, and the well-being of whosoever is going to persevere." He also stated that "It is incumbent upon the physician to warn (or inform) [his patients] of the prognosis of diseases of all magnitudes, whether they are chronic or acute, good or bad."

وقالَ أيضاً: ليس يمكنُ الطبيب أن يبري جميعَ المرضى، وقالَ أيضاً: وعلى الطبيبِ أن يتقدَّمَ فيُنْذِرَ بموتِ من يموتُ وسلامةِ من يسلمُ، وقالَ أيضاً: وعلى الطبيبِ أن يُنْذِرَ بما تؤولُ إليه الأمراضُ من الطولِ والقصرِ والخيرِ والشرِ.

Al-Zahrāwī[12] said in *Al-Taṣrīf(The Method)*, "My students, take the best of paths and leave the deadly diseases, that are difficult to cure, and stay clear from what you fear, for it is better for your dignity, and higher in this life and the next, in accordance with your ability."

قالَ الزهراوي في التصريف: يا بَنِيَّ: استعملوا الطريقَ الأفضلَ واتركوا الأمراضَ الخَطِرَةَ، العَسِرَةَ البرءِ ونزِّهوا أنفسكم عمّا تخافون فهو أبقى لجاهِكُم وأرفعُ في الدنيا والآخرةِ لمقدارِكُم.

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[10] ".كلّما" :حسب نسخة المخطوط -- The word was spelled "*kūllimā*" in the text.

[11] For more on Hippocrates in the Arabic tradition, see the collection of various studies by Fuat Sezgin in *Hippocrates in the Arabic Tradition: Texts and Studies* (Frankfurt am Main: Institute for the History of Arabic-Islamic Science at Johann Wolfgang Goethe University, 1996).

[12] Abū al-Qāsim Al-Zahrāwī (A.D. 936-1013), known to the West by his Latin name Albucasis, was born in Al Zahra', six miles northwest of Cordoba in Andalusia. He is best known for his early and original breakthroughs in surgery. His only written work is *Al-Taṣrīf (The Method)*. It is a medical encyclopedia compendium of 30 volumes and "stood for nearly 500 years as the leading textbook on surgery in Europe." See "Abu al-Qasim," *Encyclopædia Britannica*(Encyclopædia Britannica Online, 2008). Accessed 1-22-2008. <http://www.britannica.com/eb/article-9003417>.

Galen[13] said, "Do not treat terrible diseases or you will become terrible doctors." He also said, "My students, let your precaution be stronger than your aspirations, and do not approach anything except after certainty that a favorable recovery in your patient is possible."

Chapter Two: On Contagious Disease and Reliable Advice

Let it be known that a physican must be familiar with contagious diseases, so he may be on guard and warn against them, especially leprosy. It is spread by proximity [to person who has leprosy], as the learned scholar of *al-Maghrib*, *Ibn Zuhr*[16], may God the Exalted have mercy on him, has determined. Such a patient should not be admitted into the hospital out of fear of spreading the disease to the public. This is only the case if the disease is its initial state, but if the disease has progressed deeply, then it is necessary to make him leave the public completely(he must be quarantined).[17] I have seen in most cities, how opposite/different [it is] from the custom of Egypt, may God protect it, and this is a disadvantageous

فقد قالَ جالينوس: لا تداووا أمراضَ سوءٍ فتكونوا أطبَّاءَ سوءٍ، وقالَ أيضاً: يا بَنِيَّ وليكنْ حذركم أشدَّ من رغبتِكُم ولا تُقْدِمُوا على شيءٍ إلاَّ بعد علمِ اليقينِ مما تصيرُ به العافيةُ المحمودةُ.

الفصلُ الثاني في ذكرِ الأمراضِ المعديةِ والنصائحِ الموفيةِ

لِيُعْلَمَ أنَّ مما يلزمُ الطبيبُ أن يعرفَهُ الأمراض التي تـعد ي[14] فيحذرها ويحذّر منها، خصوصاً الجذام، فإنه يعدو بالمشافهة[15] نصَّ عليه علاَّمةُ المغربِ ابن زهر رحمه الله تعالى، فلا يُجعلْ إذا كان كذلك أن يُنزلَ بالبيمارستان خشيةَ عمومِ البلوى، هذا إذا كان في ابتداءِ أمرِه. أمَّا إذا استحكمَ فحينئذٍ ينبغي أن يُخرجَ من العموم أصلاً. ورأيت كما في غالبِ المدنِ خلافاً لعادةِ مصر، حرسها الله تعالى، وهي عادةٌ سيئةٌ.

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[13] For more on Galen in the Arabic tradition, see the collection of various studies by Fuat Sezgin in *Galen in the Arabic tradition: Texts and Studies* (Frankfurt am Main: Institute for the History of Arabic-Islamic Science at Johann Wolfgang Goethe University, 1996).

[14] حسب نسخة المخطوط: " تعدو ." —The word was spelled *ta 'dū* in the text.

[15] شافهه: قرب شفته من شفته (القاموس المحيط، ص1611). -- The word *mashāfaha*, derived from the verb *shāfaha*, meaning to "bring one's lip near another," can be translated as "proximity to." See Fīrūzābādī, *Al-Qāmūs Al-Muḥīṭ*, 1611.

[16] 'Abū Marwān 'Abd al-Malik ibn Zuhr (1091-1161 A.D.), known as Avenzoar or Abumeron in Latin, was one of medieval Islam's foremost surgeons and physicans in Andulasia. See Rabie E. Abdel-Halim, "Contributions of Ibn Zuhr (Avenzoar) to the progress of surgery: A study and translations from his book Al-Taisir, "*Saudi Medical Journal 26* (2005): *1333-1339*.

[17] It is unclear as to whether the author is advocating the eviction of the patient from the city or some other form of quarantine.

custom [i.e. that they do not practice quarantine or that they practice quarantine differently].[18]

Let it be known that there are many contagious diseases, but a general rule concerning them is that every disease has a malodor and an odor, like lepromatous-type leprosy, which we have mentioned previously, tuberculoid-type leprosy,[21] pannus, trachoma, divine fever, consumption, ophthalmia (conjunctivitis), and spreading destructive ulcers, like the ulcers which in our time have been named "Frankish Chancre" (i.e. syphilis).[22]

This disease, the majority of the time, spreads through the predominance of the yellow bile. In one form [of syphilis], the head [of the ulcer] is sharp (clearly defined), and its surrounding body is small, and it heals quickly. In another form, the head [of the ulcer] is round, and its surrounding body is large, and it is difficult to get rid of, because it is mixed with destructive dense phlegm (or dense phlegm from the

ولتَعْلَمَ أنَّ الأمراضَ المعديةَ كثيرةٌ جداً ولكنَّ ضابطَها: كلُّ علَّةٍ تكون لها نَتْنٌ وريحٌ نحوَ الجذامِ السابقِ ذِكْرُهُ والبَرَصُ والسبلُ والجربُ والسلُّ والحمَّى الربّانية[19] والرَّمَدُ والقروحُ الساعيةُ الشديدةُ المرداةِ نحوَ القروحِ المسماةِ في عصرنا بالحبِّ الفِرَنْجِ.[20]

وهذا المرضُ في الغالبِ ينشأُ عن غلبةِ الصفراءِ، ومنه محدّدُ الرؤوسِ صغيرُ الحرمِ وهو سريعُ الزوالِ، ومنه مدوَّرُ الرؤوسِ كبيرُ الحرمِ وهو عَسِرُ الزوالِ لاختلاطهِ بالبلغمِ الغليظِ الودى.

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[18] It appears that the author is criticizing the manner in which quarantine is practiced in cities outside of Egypt, but the reasons for the criticism are unclear. According to Evliyā Chelebi's travel reports in the 17th century and Dols' research, Egyptians did not have quarantine/leper houses, like other North African, Middle Eastern, and Anatolian cities (Leiser and Dols, "Part One," 205-6, footnote 77, see also Dols, "The Leper in Medieval Islamic Society," 913-916). While it is possible that Cairo practiced it during our author's time, and stoped practicing it later in the 17th century, I believe that Chelebi may have been mistaken and that Egyptians did practice quarantine when it came to leprosy, but that it was perhaps by expelling lepers, not putting them in leper hospitals. For more on the pluralistic beliefs that existed in Middle Eastern society about contagion, syphilis, and other diseases, see the Introduction, p. 61-70

[19] كُنْتُ غير قادر على إيجاد المعنى أو وصف للكلمة "حمَّى الربّانية". -- I could not find a definition, translation, or a description of divine fever (*ḥumma al-rabānīah*).

[20] مرض الزهري.

[21] *Baraṣ* could also be a reference to vitiligo, leukoderma, scleroderma, pellagra, or ichthyosis. *Baras* is derived from an Arabic root that means 'to be white or shiny' and probably referred to leprosy. It was used to refer often to leprosy in its early stage or its tuberculoid form. *Baras* was also however used to refer to other skin disorders. White *Baras,* for example, could equally refer to vitiligo (leukoderma) and scleroderma. Black *Baras* could be a reference to leprosy, but could also be used to describe pellagra and ichthyosis. See M. Dols, "Leprosy in Medieval Arabic Medicine," *Journal of the history of Medicine and Allied Sciences* 36(1979): 314-33.

[22] For more on syphillis in Middle East, see the Introduction, pp. 59-70.

[23] While al-wadyyi generally means something deadly or destructive, according to a study of Ibn Sina *Cannon*, al-wadī is also used to refer to secretions from the bulbourethral glands or cowper's glands.

bulbourethral glands).[23]

The populace took for this disease, treatments that do not conform to the general rules, such as pills made of mercury. They made the sick swallow them, and perhaps this has benefited the patients. Additionally creams made out of [mercury] and other ingredients, as well as incense [made of mercury] are [also used]. This treatment is not mentioned in the books of the ancient scholars, but I did find in Ibn Zuhr's *Treatment of Plagues*, the drinking of pigeons feces. He approximately said [in his book], "That this disease [plague] is nothing but utmost destruction and poisoning and that the only [medication] that will prevail over it is that which is stronger than it in its destructive effect on the body, and contains in it [the characteristics of the disease]."

As to what will treat this disease [syphilis], is [one of] the gifts of the Indian wood, called Chinese small pearls.[27] It is indeed amazing, and unlike mercury, has no painful side effects.[28] I have been informed that it is the root of the Chinese water lily.

وقد اتخذَ العوامُ لهذا الداء [24] أدويةً كادتْ لا تطابقُ القواعدَ نحوَ الحبوبِ المتخذةِ من الزئبقِ فإنهم يُبْلِعُونَهَا للعليلِ وربَّما أفادَ ذلك، وكذلك الدهانات له مع بعضٍ أخرى والبخورات به كذلك، وهذا العلاجُ لا نجدهُ في كتبِ المتقدمينَ، لكن رأيتُ لابن زهر في معالجاتِ الطواعينِ سقي خرء الحمامِ وقالَ ما معناهُ: إنَّ هذا المرضَ لا يكونُ إلاَّ في غايةِ المرداةِ والسميَّةِ ولا يزيلُهُ إلاَّ ما هو أشدُّ منه في المرداةِ وفيه ما فيه.

وأمَّا ما يعالجُ به هذا المرضُ من أعطاء الخشبِ الهنديِّ المسمَّى الشذر صيني[25] فهو عجيبٌ جداً من غيرِ عائلة[26] بخلافِ الزئبقِ، وبلغني أنَّه أصل النيلوفر الصيني.

Hence, this could be reference to ulcers in the areas of the glands. See, Abdul-Hameed, *A Comprehensive Glossary of Avicenna's Canon of Medicine*, 207.

[24] حسب نسخة المخطوط:" الدوا،"و لكن من الواضح أنّ المؤلف قصد "الداء." — The scribe wrote *dawā* (medicine), but it is evident that the author must have meant *dā'* (disease).

[25] الشذر هو اللؤلؤ الصغار (القاموس المحيط ص 531)، ولكن من الممكن ان المؤلفَ قصد "الجذر صيني." *Shadhr* is defined as "small pearls" (*Al-Qāmūs Al-Muḥīṭ*, 531), and while this could be a reference to the buds of a certain tree, there is a strong possibility that the author meant *jadhr Ṣīnī*, which has been identified as *Smilax China*. See Hassan Kamal, *Encyclopaedia of Islamic Medicine, with a Greco-Roman Back-Ground* (Cairo: General Egyptian Book Organization, 1975): 775. See footnote 27 for more.

[26] أى بغير ألم او آثار جانبية. -- *'ā'ilah* comes from the root *'āla* or *'aul*, which can mean "to distress" or "to burden." Hence, the correct translation in this context would be a "painful side effect." See Wehr, 770.

[27] I am inclined to believe that this treatment was the same as that mentioned by Dāwūd al-Anṭākī(d. 1599) as *Ṣub-Ṣīnī* (China Root) for Syphilis, which was a widely used European treatment for syphilis. It was a rhizome of a species of smilax(*Smilax china L.)* native to eastern Asia, having steroidal sapogenins. See Peter Pormann and Emilie Savage-Smith, *Medieval Islamic Medicine*(United Kingdom: Edinburgh University Press, 2007): 170

Warning: The diseases which are inheritable include every disease of the essential organs such as the nerves, the bones, the membranes[30], and the ligaments, etc. Likewise, tuberculosis, pterygium, dental caries, kidney or bladder stones, painful joints, scoliosis or kyphosis, scrotal hernia or hydrocele, and enuresis nocturnal(bed wetting), [are also inheritable.] May God the Exalted protect us from all these diseases.

تنبيه: من الأمراضِ ما يتوارثُ وهو كلُّ مرضٍ كان بالأعضاءِ الأصليةِ نحوَ الأعصابِ والعظامِ والأغشيةِ والرباطاتِ ونحوِها، وذلك نحو السلِّ والظُفرةِ وتآكلِ الأسنانِ والحصاةِ بالكليةِ والمثانةِ وأوجاعِ المفاصلِ والأتبةِ[29] والأدرةِ والبولِ في الفراشِ، أعاذنا اللهُ تعالى من الجميعِ.

The significance of the above is that if you are summoned to treat such a disease, you should not expect at all to cure it, but rather to control its symptoms, and prevent its harms, because [these diseases are] from the diseases that God has decreed their nature to be so [i.e. inheritable, chronic and incurable]. Understand this!

فهذه ما في معناها؛ إذا دعيتَ لمعالجتِها فلا تطمعْ في زوالِها أصلاً، بل اطلبْ كسوَ عادتها ودفعَ ضررها فقط لأنَّها من الأمراضِ التي طبعَ الحقُّ الطبيعةَ عليها، فافهمْ ذلك.

It is necessary for the doctor to know that the diseases that are curable are either hot or cold. Hot diseases are hard to extinguish in their initial stages, but easy to cure in their peak stages, while cold diseases are the opposite. Similarly, curable diseases of humid nature are easier to treat than curable dry diseases.

ومما يلزمُ الطبيبُ أن يعلمَ: أن الأمراضَ الممكنةَ البرءِ لا يخلوا إمَّا أن تكونَ حارةً أو باردةً، فالحارةُ عسرةُ الزوالِ في ابتدائِها؛ سهلةُ الزوالِ في انتهائِها، والباردةُ على العكسِ من ذلك، وإنَّ المرضَ الرَطِبَ الممكنَ البرءِ علاجُهُ أسهلُ من المرضِ اليابسِ.

Middle aged adults and the elderly are very difficult to cure, as are [the diseases] of children. The diseases of women are also distressful, [while] the diseases of youth are the easiest to cure. Any curable disease that has remained untreated is also difficult to cure.

والكهولُ والشيوخُ علاجُهُمَا عسرٌ جداً، وكذلك الأطفالُ، والنساءُ مرضُهُم عسرٌ. والشبابُ مرضُهُم سهلُ الزوالِ، والمزمنُ مما يمكنُ برؤهُ عسرُ العلاجِ.

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[29] تصلّب يصيب عظام الظهر فيؤدي إلى انحنائه (القاموس المحيط ص 31). – *ʾāṭaba* literally indicates curvature of the back or chest (Fīrūzābādī, *al-Qāmūs al-Muḥīt*, 31). In the context of inheritable diseases, I have chosen to translate it as kyphosis or scoliosis.

[30] Phlegmatic, synovial, and foetal membranes (Abdul-Hameed, *A Comprehensive Glossary of Avicenna's Canon of Medicine*, 19).

The medical treatment of drug addicts is extremely difficult, especially if the type of addiction compounds the symptoms of a disease [the patient already has]. Take for example, a patient suffering from syncope (dizziness) who also uses opium. [Another example] is a person who has a weakness in his sexual potency due to cold, and persistently drinks the coffee that has been created in our times from coffee bean or from its surrounding shell.

وعلاجُ ذوي الكيفياتِ عَسِرٌ جداً لا سيَّما إذا كانت من جنسِ المرضِ، كمن به سدرة وهو يستعملُ الأفيونَ أو عندَه ضعفُ الباهِ عن بردٍ وهو ملازمٌ لشربِ القهوةِ التي جُعِلَتْ في عصرنا من البنِّ أو من قشرِهِ.

Its nature is that it is dry in the latter [coffee bean shell] and cold when taken from the former [coffee bean itself], or slightly more than that. It is very harmful for those who have a cold temperament, because it [coffee] is suitable for people with a dry temperament. As for people with a humid temperament, coffee is not suitable for them, unless they live in a hot climate, then coffee becomes extremely suitable for them. As is the situation of the people of Yemen from Tihama,[32] excluding the people of the mountains. However, if the [people of the mountains] fix it[regular coffee] with fresh green bin, it could perhaps be suitable for them. The same case applies to some of the people of Abyssinia.

فإنَّ طبعها كان أن يكونَ من اليبسِ في الثانيةِ ومن البردِ في الأولى أو أزْيَد من ذلك قليلاً[31]، وهو من أعظمِ المضارِّ لأصحابِ الأمزجةِ الباردةِ كمناسبَتِها الأمزجةَ اليابسةَ، وأمَّا الرطبةَ: فلا، بل شرطَ غلبةِ الحرارةِ عليهم، وهو حينئذٍ تناسبهم للغايةِ، كطبعِ أهلِ اليمنِ من تهامةَ دونَ أهلِ الجبالِ، ما لم يصلحونَهَا بالبنِّ الطريِّ، فحينئذٍ ربَّما تناسبهُم، وكذلك أهلُ بعضِ بلادِ الحبشةِ.

Let it be known that from the benevolent

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31 من الممكن أن "الأولى" و"الثانية" يدلوا على درجات الأدوية.ويقول كتاب الماء:

ودرجات الأدوية: مراتبها. وهي أربعة. فكلّ ما يؤثر مقدار الشربة منه في البدن الإنساني المُعتدل،إمّا أن يؤثر فيه تأثيراً معتدلاً فهو الدواء المعتدل، إما أن يؤثر فيه تأثيرا فيه كيفيّة زائدة على كيفيّة البدن، فإن لم يكن ذلك التأثر محسوسا إحساسا ظاهريًا ، فهو في الدرجة الأولى. فإن مال البدن الى التحسّن، و لم يضره الدواء بشيء فهو في الدرجة الثانية. وإن ضرّ ولم يبلغ أن يقتل فهو في الدرجة الثالثة. وإن بلغ ذلك فهو في الدرجة الرابعة(كتاب الماء – الجزء الثاني، ص: 72).

There is a possibility that the words *al-'āūla* and *al-thānīya* are reference to the degree of potency. In Islamic medicine, there were four degrees or states of potency for each medication or compound (*darajāt al-'ādwiya*). The first degree has only a slight positive effect on the body. The second degree produces the desirable effect(i.e. improves the patient) without producing any harm(i.e no side effects). The third degree is overly potent and harms the patient, but does not kill him, while the fourth degree kills the patient. See *Kitāb al-Mā'*, v.2, 72.

32 Coastal plains along SW and S shores of the Arabian Peninsula.

creations of God the Exalted is that he inspired the people who drink [coffee], to drink it hot, thereby creating a kind of balance to its cold qualities. And if they drink coffee cold, they would start to feel various illnesses. Although, coffee usually cools(decreases) sensation in people of dominant cold or dry temperaments. And God, the exalted, knows best

Part Two

Part Two is on the particular diseases of each body part, arranged from head to foot. It is divided into ten chapters. Chapter one is on the diseases of the head and eye. Chapter two is on the diseases of the ear, nose, tongue, and teeth. Chapter three is on the throat and neck. Chapter four is on the chest and lungs. Chapter five is on the heart and stomach. Chapter six is on the liver. Chapter seven is on the gallbladder, spleen, kidneys, and bladder. Chapter eight is on the intestines and stomach. Chapter nine is on the penis, testicles, and uterus. Chapter ten is on the general diseases of the external (visible) organs.

وليُعْلَمَ أنَّ من لطيفِ صنعِ اللهِ تعالى إلهامُ شرَّابِها استعمالها حارَّةً ليحصلَ بذلك نوعُ تعديلٍ لبردِهَا. ولو أنَّهم شربوها باردةً لأثّرت فيهم من الأمراضِ أمراً يحسونه مع أنَّها بالطبعِ تبلِّدُ حواسَ من غلبه عليه اليبسُ والبردُ، واللهُ تعالى أعلمُ.

البابُ الثاني

البابُ الثاني في ذكرِ الأمراضِ المختصَّةِ بعضوٍ عضوٍ، من الرأسِ إلى القدمِ وفيه فصولٌ عشرةٌ. الفصلُ الأوَّلُ في أمراضِ الرأسِ والعينِ. الفصلُ الثاني في ذكرِ أمراضِ الأذنِ والأنفِ واللسانِ والأسنانِ. الفصلُ الثالثُ في أمراضِ الحلقِ والعنقِ.الفصلُ الرابعُ في الصدرِ والرئةِ. الفصلُ الخامسُ في القلبِ والمَعِدَةِ. الفصلُ السادسُ في الكبدِ. الفصلُ السابعُ في المرارةِ والطحالِ والكليّ والمثانةِ. الفصلُ الثامنُ في الأمعاءِ والمعدةِ.[33] الفصلُ التاسعُ في القضيبِ والانْثَيَيْنِ والرحمِ. الفصلُ العاشرُ في ذكرِ الأمراضِ الكليةِ بالأعضاءِ الظاهرةِ.

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[33] حسب نسخة المخطوط:" مقعدة." ولكن من الواضح أن هذا الفصل يتكلم عن الإمعاء و الشرج، إذاً من الغالب أن المؤلف قصد "مقعدة" بدلاً من "معدة". انظر الفصل اللاحق في هذه الطبعة.

The chapter is clearly on the intestines and anus, and the author most likely meant to write *muq 'ada* instead of *ma'da* . Please see the chapter later in this edition.

Chapter One: On the Diseases of the Head and Eye that have no Cure.

Regarding the diseases of head [that are incurable]: diaphragmitis (paraphrenitis) that leads to delirium [is incurable], only when the patient's urine is watery. Epilepsy [is also incurable], if the patient has reached 25 years of age. According to Ibn Nafīs[35], if epilepsy happens after the patient has reached puberty, there is no cure for it. Severe melancholia that appears at the end of an acute disease is incurable, as well as apoplexy that results in a coma. These two [diseases] often lead to death. Paralysis if it happens due to cutting [is incurable].[36] Numbness, convulsions, and tremors, if they have a physiological cause, [are also incurable].

[Ibn Sīnā] said in *al-Shifā'*(*Book of Healing)*[38] that facial paralysis that "lasts

الفصلُ الأوَّلُ في ذكرِ أمراضِ الرأسِ والعينِ التي لا يمكنُ برؤُها.

فمن أمراضِ الرأسِ البرسامُ[34] إذا كان البولُ فيه مائيًّا. والصرَعُ إذا بلغَ صاحبُهُ خمسةً وعشرينَ سنةً، وعند ابن نفيس إذا حدثَ الصرعُ بعد البلوغِ لابرءَ فيه. والماليخوليا الشديدةُ في آخرِ الأمراضِ الحادةِ، والسكتةُ التي فيها الغطيطُ وهذان قاتلان. والفالجُ الحادثُ عن قطع. والخَدَرُ والتشنُّجُ والرعشةُ إذا كان ذلك عن بدنٍ.

واللقوةُ[37] قال في الشفاءِ: إذا جاوزت

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[34] "هو ورم حارّ في الحجاب المعترض بين الكبد والمعدة يحصل معه الهذلان لأتّصال هذا الحجاب بجُبّ الدِّماغ"(كتاب الماء – الجزء الأول ص: 117).

While *Birsām* has been defined as pleurisy or diaphragmitis in most studies(see glossary), in the 11th century medical dictionary *Kitāb al-Mā'*, it is explicitly described as inflammation of the diaphragm that is associated with delirium. This definition makes more sense in this context, considering the disease is listed as diseases of the head. See 'Abd Allāh ibn Muḥammad Dhahabī, *Kitāb al-Mā'*('Umān: Wizārat al-Turāth al-Qawmī wa-al-Thaqāfah, 1996): v. 1, 117.

Kitāb al-Mā' (The Book of Water) is a nine hundred page medical dictionary written by the physician 'Abd Allāh ibn Muḥammad al-Dhahabī (d. 1064). It was recently edited into three volumes by Hādī Ḥasan Ḥammūdī who claims that it may be the first medical dictionary in history that was organized in alphabetical order, rather than by subject. It is a valuable resource for anyone working with medieval Arabic medical texts.

[35] Ibn al-Nafīs was an authority on religious law, logic, and theology, but mostly known as an outstanding phsyican. "Originally from Damascus, he spent much of his life in Cairo, where he became 'Chief of Physicians.' When he died in 1288, he bequeathed his house and library to the recently constructed Mansurī hospital in Cairo." See Emily Savage Smith, "Bibliographies," *Islamic Medical Manuscripts at the National Library of Medicine*. Accessed (01-15-2008). <http://www.nlm.nih.gov/hmd/arabic/bioN.html>

[36] Whether this is reference to the severing of blood circulation to the brain or detruncation of spinal cord is unclear here.

[37] حسب نسخة المخطوط: "القوة."ولكن أعتقدُ ان المؤلفَ قصد "اللقوة" ولكن الكاتب اخطأ و كتب "القوة."

longer than forty days is [incurable]." [al-Samarqandī] stated in *al-'Asbāb wa al-'Alāmāt(The Book of Causes and Symptoms),*[39] "that if [facial paralysis] lasts more than six months, then recovery is impossible." Additionally, "dry boldness" is very hard to cure.

أربعينَ يوماً، وقال في الأسبابِ والعلاماتِ: إذا جاوزتْ اللقوةُ ستةَ أشهرٍ لا يُرجى برؤها. انتهى. والصلعُ اليابسيُّ.

Regarding the diseases of the eye that have no cure: They are *Bayāḍ*(opacity of the cornea), long standing trachoma and pannus[41] as mentioned by al-Rāzī[42], congenital lagophthalmos[43], cancer[of the eye], two layered pterygium[44], a truly arising pannus[45], epiphora(weeping discharge) upon birth, and chronic fistula lacrymalis.

وأمَّا أمراضُ العينِ التي لا يمكنُ برؤها فمنها البياضُ والجربُ والسبلُ القديمين عند الرازي والشترةُ الطبيعيةُ والسرطانُ والظفرةُ ذاتُ الطبقتين والسبلُ الناشئُ الحقي والدمعةُ الولاديةُ والغربةُ[40] المزمنةُ.

The thickening cataract, if it is vitreous, thin, or thick, and its color is red, yellow,

والماءُ النازلُ بالعينِ، إذا كانَ زجاجيّاً أو

Even though the manuscript clearly reads *quwwa* (power), from the context of the paragraph, I believe that the author meant facial paralysis (*laqwa*) here. The scribe must have made a mistake and wrote down *quwwa*.

[38] My guess is that this is a reference to ibn Sīnā's most popular book *Kitāb al-Shifā'*(Book of Healing). It was a philosophical and scientific encyclopedia, known as 'Sanatio' in its Latin translation. Ibn Sīnā, known to Europeans as Avicenna (d. 1037/428 H), was known as one of the greatest philosophers and physicians of Islam. Emily Savage Smith, "Bibliographies." Accessed (01-15-2008). <http://www.nlm.nih.gov/hmd/arabic/bioA.html>

[39] *Al-'Asbāb wa al- 'Alāmāt* was written by Najīb al-Dīn al-Samarqandī (d.1222/619 H). He was a prolific medical writer and his most famous book was *Al-'Asbāb wa al- 'Alāmāt* (*The Book of Causes and Symptoms)*, which was a comprehensive manual of therapeutics and pathology. See Emily Savage Smith, "Bibliographies." Accessed (01-15-2008). http://www.nlm.nih.gov/hmd/arabic/bioN.html

[40] "الغربة". حسب نسخة المخطوط: —The word was spelled "*gharbaba*" in the text.

[41] A pannus was believed to be a complication of trachoma. It "was the invasion of cornea by the vessels from the limbus, a condition not described in Greek sources but called in Arabic *sabal* ('rain')." Pormann and Savage-Smith, 67.

[42] Abū Bakr Muḥammad ibn Zakarīyā' al-Rāzī(d. 925/313), known to Europeans as Rhazes, was was born in the Persian city of Rayy, and served as physician at the Samanid court in Central Asia. He is reported to have headed hospitals in Rayy and Baghdad. His writings and personal observations were assembled by his students and circulated under the name *Kitāb al-Ḥāwī fī al-ṭibb* (*The Comprehensive Book on Medicine*). See Emily Savage Smith, "Bibliographies." Accessed 01-15-2008. <http://165.112.6.70/hmd/arabic/bioR.html>

[43] Entropion or ectropin were also believed to be a complications of trachoma. *Ibid.*

[44] Pterygium, "a triangular-shaped in growth of the conjunctiva onto the cornea" was also known as a complication of trachoma. Ibid.

[45] It is unclear what the author intented by *ḥaqī* here. It may be a reference to the eye socket (*ḥaq* or *ḥaqī* means socket), but the sentence structure does not support this. Hence, I have translated it as "truly."

green or black [is also incurable]. The thicker the cataract, the less likely a couching procedure will benefit the patient, and I have not seen in our time a successful couching operation.

رقيقاً جداً أو غليظاً جداً وكان لونهُ أحمرَ أو أصفرَ أو أخضرَ أو أسودَ، وكذلك كل ٌما[46] كان من الماءِ، (هو) غيرُ متوفرٍ بشروطِ القدحِ. ولم أرَ في عصرِنَا من قَدَحَ ونَجَحَ.

Mydriasis if it is complete and becomes chronic, [is incurable], and God knows best.

وكذلك الانتشارُ إذا تكاملَ وأزمَنَ والله أعلم.

Chapter Two: On the Diseases of the Ear, Nose, Tongue, and Teeth that have no Cure.

الفصلُ الثاني: في الأمراضِ التي لا يمكنُ برؤها بالأذنِ والأنفِ واللسانِ والأسنانِ.

Regarding the diseases of the ear that have no cure: congenital deafness, chronic deafness caused by phlegm, and inflammation [of the ear] occuring at the bottom (fundus) of the ear, near the auditory nerve. It is deadly. † *Al-Sharbātī* † according to al-Rāzī is deadly.

أمَّا أمراضُ الأذنِ فهي الطرشُ الخَلْقِيُّ والحاصلُ من بلغمٍ وأزمنَ والورمُ الحالُّ في قعرِ الأذنِ مما يلي العصبَ وهو قتال.† الشرباتي †[47] عند الرازي وهو قتال.

Regarding diseases of the tongue [that have no cure]: The heaviness of [the tongue] and change of speech that happens after an acute fever. Its symptoms are atrophy and spasm of the tongue. It also [could] happen after *Birssām* or *Birsām*, and if [the change in speech] remains [after *Birsām* has passed], then it is incurable. A great fall or trauma [can also lead to a change in speech and lethargy of the tongue].

وأمَّا أمراضُ اللسانِ فَثِقَلُهُ وتغيُّرِ نطقهِ الحادثُ عَقِبَ الحُمَّيات الحادة، وعلامتُهُ ضمورُهُ وتشنُّجُهُ، والحادثُ عَقِبَ البرسّامِ أو البرسامِ[48] وأزمَنَ، والحاصلُ عَقِبَ ضربةٍ أو سقطة.

I have come into contact with many

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[46] حسب نسخة المخطوط: "كلما". -- The word was spelled "*kullimā*" in the text.

[47] كُنتُ غير قادر على إيجاد المعنى لهذه الكلمة ولم اجد قراءةً أخرى لها. -- I have been unable to define this word, or find an alternative reading.

[48] استخدم المؤلف خيارات بديلة في تهجئة كلمة "برسام". -- The author has written alternative spellings for the word *Birsām*. As discussed earlier it seems to imply a disease of the diaphraghm or pleura that lead to delirium (See footnote 31).

people, who were stricken with this disease, and incompetent doctors labored hard to cure it, and the patients did not benefit at all. If they knew it was impossible to cure, and informed the patient of this, it would have been good for them.

Ulcerating infantile thrush or aphthae that is black is deadly. Warning: If a dark piercing lesion in the shape of chick-pea develops on the tongue during an acute disease, and the patient develops a desire for spicy foods, it is a sign that he is close to death.

Regarding the diseases of the teeth that [are incurable]: [the first one] is the falling out of teeth due to severe dryness and atrophy[of the gums]. This disease happened to a prince(*Amīr)* in Egypt, the protected country, and he tired immensely in its treatment without experiencing any benefit, until the prince became a disbeliever in this profession [medicine]. This could had been avoided had he known that it was incurable.

Long lasting green and black cavities, and [cavities] with calcified (or petrified) surroundings [are also incurable]. Additional diseases that are impossible to treat, include the shrinking of the lips that follows vomiting, according to [the physician] al-Samarqandī. The atrophy of the gums at the roots of the teeth [is also incurable].

Chapter 3: On the Diseases of the

وقد اطَّلعتُ على كثيرٍ ممن أصابهُ هذه العلةُ وأتعبهُ أطبَّاءُ السوءِ ولم يحصلْ لهم نفعٌ أصلاً. ولو علموا أنَّه ميؤوسُ الشفاءِ وأخبروا العليلَ به لكانَ خيراً لهم.

والقلاعُ الأسودُ المتقرِّحُ بالأطفالِ فهو قتَّالٌ تنبيه: فلو حصلَ في اللسانِ نترةٌ[49] سوداءُ كالحمصِ في المرضِ الحادِّ وعرضَ شهوةَ الأشياءِ الحادَّةِ دلَّ على قربِ الموتِ.

وأمَّا أمراضُ الأسنانِ، فتقلُّعُهَا الحادثُ عن اليبسِ الشديدِ والضمور. وقد وقعَ هذا المرضُ لأميرٍ بمصرَ المحروسةِ وتعبَ في علاجِه للغايةِ ولم يحصلْ له نجحٌ حتى صارَ مكذِّباً لهذه الصناعةِ، فلو علمَ أنَّه ميؤوس الشفاءِ لما كان كذلك.

والحفرُ الأسودُ والأخضرُ المزمنُ والمتحجِّرُ الحائطِ. ومن الأمراضِ المايوسةِ البرءِ تقلُّصُ الشفةِ الحادثُ عَقِبَ الاستفراغاتِ عند السمرقندي، وكذلك نقصانُ لحمِ اللثَّةِ عن جوهرِ الأسنان.[50]

الفصلُ الثالثُ في الأمراضِ التي لا يمكن

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[49] الطعنة النافذة، القاموس المحيط ص: 616. -- The word *natra* literally means a "deep thrust," or a "piercing stab." It must be a reference to some sort of lesion, possibly an oral ulcer or fistula. I have translated it as a "piercing lesion." See *Al-Qāmūs al-Muḥīṭ*, 616.

[50] حسب نسخة المخطوط: "لسانا"، ولكن أعتقدُ ان المؤلفَ قصد "الأسنان". -- The author/scribe wrote *lisān* (tongue), but from the sentence it is clear that the author meant *'āsnān* (teeth).

Throat and Neck that have no Cure.

Tonsilar or laryngical inflammation[52], is lethal, if [the patient's] face turns green, his eye sockets become dark, his pulse falls, and his limbs become cold. Ibn Nafīs said, "if a patient reaches this stage, then death is near." The Imam Hippocrates said, "whosoever develops tonsilar or laryngical inflammation, and the skin of his posterior neck turns from red to white or green, and he starts to sweat from his armpits and upper thighs, a cold sweat, then he will die on the same day."

The drowning man and the strangled man, are also unlikely to live, if they start to foam from their mouth.

Regarding diseases of the neck [that have no cure]: the herniation of the cervical vertebrae to the left or right, as is said in *al-Taksīr*.[54] I have mentioned [elsewhere] as to how to treat the anterior displacement of the two [specific] vertebrae, but I have yet to state [how to treat] the lateral displacement

برؤها بالحلقِ والعنقِ.

وهي الخنَّاقُ، إذا اخضرَّ وجهُ صاحبِهِ واسودَّتْ محاجِرُهُ وسَقَطَ نبضُهُ وبردتْ أطرافُهُ، وهوقتَّالٌ. قال ابن نفيس: وإذا بلغَ الحالُ فالموتُ مطلٌّ. وقال الإمامُ أبقراط: من كان به خنَّاقٌ فتحوَّلَ لونُ مؤخَّرِ عُنُقِهِ من حُمرتِهِ المعتادةِ إلى البياضِ أو الخضرةِ وعرقَ إبطاهُ وأربيتاهُ[51] عرقاً بارداً فإنَّه يموتُ في غدِ يومِهِ.

وكذلك الغريقُ والمخنوقُ إذا أزبدا فهو بُعْدُ عَيْشِهِمَا.

وأمَّا أمراضُ العنقِ: فانخزالُ[53] فقراتها إلى اليمينِ أو الشمالِ، قال في التكسير. وقد ذكرتُ كيفَ العملُ في انخزالِ الفقرتين إلى داخل، وبقي أن أذكرَ انخزالَهُمَا وانخزالَ ما

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[51] والأربية: أصل الفخذ(كتاب الماء – الجزء الأول ص: 54). – The word *'arbaya* means the "origin of the thigh," and is mostly likely a reference to the groin area. See *Kitāb al-Mā'*, v. 1, 54.

[52] While a*l-khanāq* has been identified as diphtheria in some studies (see glossary), it had much wider connotation as any type of severe inflammation within the throat. A more proper translation would be croup or quinsy.

[53] الانخزال: "مشْيَةٌ في تثاقُلٍ" والخُزْلة:"الكسرة في الظهر." (القاموس المحيط 367). – The word *'inkhizāl* from the root *khazal* means "to walk heavily," (*Al-Qāmūs al-Muḥīṭ*, 367) "to sever," "to shorten," (Wehr, 275), and the noun *khuzla* means "to have his back broken," (*Al-Qāmūs al-Muḥīṭ*, 367). In this context, it appears to suggest a displacement or fracture of the vertebrae. From the description of the condition, a correct medical translation would be a "disc herniation."

[54] بعد بحث شامل، لم أستطع ايجاد نص باسم "التقسير." ومن غير الواضح من هو مؤلف "التقسير" أو إن كان ذلك اسم كتاب أو اسم فصل من كتاب. و بالإضافة لذلك، من غير الواضح إن كانت هذه العبارة تنهي الجملة السابقة أو تبدأ جملة جديدة. أنا فسرت العبارة كنهاية الجملة لأن النص التالي يبدأ بـــ " ذكرت."

After an exhaustive search, I could not find a work called "*al-Taksīr.*" Additionally, the phrase "he said in *al-Taksīr*" is ambiguous here. First it is not clear who the author of the *al-Taksīr* is, or whether it is name of a book or a chapter of a book. It is also not clear if this phrase ends the previous sentence, or starts a new sentence. I interpreted the phrase as ending a sentence, because the next sentence starts with, "I have mentioned..."

of [the two specific vertebrae] and the vertebrae below them.

بعدَهُمَا إلى أحدِ الجانبين.

If the displacement is simple, then a decrease in equitability of the limbs will follow. If the displacement is severe, flaccidity (paralysis)[55] will happen on one side, because of the pressure applied on the spinal nerves[by the displaced vertebrae], and rigidity on the other side due to the distention [applied to spinal nerves on the other side]. Whenever tension is placed on the vertebrae, rigidity follows. Each of these two situations are distressful by themselves, so how about if they happen together?

فإن كان يسيراً، تَبِعَهُ قلَّةُ الاعتدالِ في الأعضاءِ. وإن كان كثيراً، تَبِعَهُ استرخاءٌ بسببِ ما ينالُ النخاعَ من الضغطِ من جانبِه الواحدِ ويتبعهُ التشنُّجُ بسببِ ما ينالُهُ من التمدُّدِ من الجانبِ الآخر. فإنَّ الفقارَ متى نالَهُ تمدُّدٌ تَبِعَهُ التشنُّجُ صورةً؛ وأحدُ هذين العرضين مهلك بذاتِه، فكيفَ باجتماعِهِمَا؟

The hoarse voice in the very old man [also does not have a cure].

والبحوحةُ بالشيخِ الفاني.

If something appears on the superior venous cava, that looks like the seeds of Ricimus Communis (Castor Oil Plant) accompanied by white rash[56], and followed by a desire for spicy foods, then death is predicted within 20 days.

وكذا لو ظَهَرَ على وريدِ العُنُقِ شيءٌ يشبهُ حبَّ الخروعِ مع خصفٍ أبيضَ كثر ثم عرضَ شهوةَ الأشياءِ الحادَّةِ، فإنَّ الموتَ في هذا يُتوقَّعُ في العشرين.

If the nerve to the shoulder is severed, and it becomes rigid and then turns flaccid [then it does not have a cure]. Even if it is treated with all the different types of remedies, the nerve will not fasten back to its position, and the patient will not benefit at all.

وكذلك المنكبُ إذا كان عصبُهُ قد انقطعَ واشتدَّ واسترخى وعولِجَ بضروبِ المعالجاتِ فلم يثبتْ في موضعٍ ولم يُفِدْ شيئاً.

Chapter 4: The Diseases of the Chest and Lungs that Have no Cure.

الفصلُ الرابعُ في ذكرِ الأمراضِ التي لا برؤلها بالصدرِ والرئةِ.

[55] *Al- Istirkhā'* is "generally used in the loose sense of relaxation, but in its strict sense denotes complete loss of the power of movement and sensibility (Siddiqqi, 148)."

[56] *Al-khaṣf* is a kind of skin eruption which causes itching of the body in the day (Siddiqqi, 151).

فمنها ذاتُ الجنبِ، إذا نَفَثَ صاحبها في أوّلِ أمرِه شيئاً أسودَ شديدَ السوادِ أو شديدَ الصُفْرَةِ ودامَ على ذلك، ولم تسكنْ الحمَّى ولا الحرارةُ إلى السابعِ، وكان النفسُ لا ينفسخُ، وجرتْ في الصدرِ خرخرةٌ واحمرَّتْ الوجنةُ وشخصتْ العينُ.

Pleurisy (or pneumonia) is incurable, if the patient is coughing out, early in the disease, very dark or very yellow sputum, and continues to do so, and his/her fever or temperature does not subside in seven days, and he/she becomes short of breath, and wheezing circulates throughout the chest, and the cheeks turn red, and the eyes start to bulge.

قال الإيلاقي وإن لم ينفث في السابعِ أو نفثَ بلا تقيُّحِ البتَّة فإن كانت القوةُ ضعيفةً فإنَّه يهلكُ قبلَ الرابعَ عشرَ في الأكثرِ. وقال أيضاً: وإن كانت القوةُ قويةً مع علاماتٍ صالحةٍ رُجِيَ أن يجاوزَ الرابعَ عشرَ ثم يموتُ في الأكثرِ بعدَهُ.

Al-'Īlāqī[57] said, "if [the patient] does not start to cough out sputum on the seventh day, or if he does, but without purulence at all, and his strength is low, then he will most likely perish before the fourteenth day." He also said, "if his strength is strong, and he displays good signs, then there is hope that he will live past the fourteenth day, but will most likely die after that."

قال ابن نفيس وإن تأخَّرَ النفثُ إلى ما بعد الرابع مع رداتها، أعني رداة الأعراضِ، فهو دليلُ الموتِ.

Ibn Nafīs said, "That if sputum is delayed till after the fourth day[58], along with its [associated] destructive symptoms, it is a sign pointing to death."

ومنها السلُّ وهو قرحةٌ(أو قزحةٌ)[59] في

[Also from the diseases of chest and lungs that can not be cured is] consumption, and it is an ulcer (or a seed that branches out) in

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[57] Muḥammad ibn Yūsuf al-Īlāqī (either fl. 1068/460 H or died 1141/536 H) was a student of Ibn Sina (Avicenna). "His name, al-Īlāqī, suggests that he or his family were from Īlāq, a town near Nishapur. He made an epitome of the first book of the *Canon of Medicine* by Ibn Sīnā (Avicenna) which was known by various names: *Kitāb al-Fuṣūl al-Īlāqīyah* (*The Aphorisms of al-Īlāqī*) and *Kitāb al-asbāb wa-al-'alāmāt* (*The Book of Causes and Symptoms*)." See Emily Savage Smith, "Bibliographies." Accessed (01-15-2008). <http://165.112.6.70/hmd/arabic/bioR.html>

[58] It is quite possible that the author meant "if the sputum lasts till after the fourth day." The sentence is rather unclear.

[59] هناك إمكانية بأنَّ هذه الكلمة قَدْ تَكُونُ "قزحةٌ." والقزح: الأباذير (البذور) ، والمقزّح: شجر على صورة التين له أغصان والتقزيح: شيء على رأس نبت أو شجر يتشعّب شعباً كبرثن قصار في رؤوسها مثل شعر الكلب، وقوازح الماء: نفّاخاته. الكلب (كتاب الماء – الجزء الثالث ص:202).

The word in the text could either be *qazaḥ* or *qaraḥ*. It is unclear, and unfortunately both words fit the description for tuberculosis. *Qazaḥ* means a seed or a head of a plant that braches out (*Kitāb al Mā'*, v. 3, 202). *Qaraḥ* means a bleeding sore or ulcer(Wehr, 885). Both words work equally well when speaking of tuberculosis.

the lungs, always accompanied by hectic fever[60]. Ibn Nafīs said, "Early[61] consumption is rarely seen, because it has not become purulent yet, but is just a laceration [in the lung]. Consolidated (or more advanced) consumption has no cure, whether the patient was infected long ago or recently, because of its purulent nature."

الرئةِ يلزمها حمَّى دقيقة. قال ابن نفيس: †والمبتدي† من السلِّ قلّ ما يُرى وهو الذي لم يتقيَّحْ بعدُ بل كان جراحةً، والمستحكمُ لا علاجَ له وهو المتقيِّحُ طالَ زمنهُ أو قَصُرَ.

Ibn Zuhr said, "If airways to the lungs have collapsed, a hectic fever will follow, followed by consumption, followed by the swelling of the legs, and later purulent inflammation [of the lungs]. After this, the [the patient] will die."

قال ابن زهر: والرئةُ إذا أصابها انتقاضُ الاتصالِ تَبِعَ ذلك حمَّى الدق ثم السل ثم تورُّمُ القدمينِ ثم يرمُ ورماً متقيّحاً، ثم يموتُ.

Whenever purulence is indicative of a favorable outcome, and by this I mean, it is a white pus of medium consistency without a repugnant smell, the life of the patient will be extended and death will be delayed.

ومتى كان التقيُّحُ فيها على الوجهِ المحمودِ، أعني يكون مَدَّةً بيضاءَ معتدلةَ القوامِ غيرَ كريهةِ الرائحةِ؛ طالت مُدَّةُ المريضِ وتأخَّرَ أمرهُ.

However, if the purulence is not white, and not of medium consistency, or it is a mixture of two colors, blood or a dark blackish color, then the patient's time is not long, and his destiny is undeniably unfortunate. If the purulence is black or green, then he will not live for more than twenty days.

وأمَّا إن كانت غيرَ بيضاء أو غيرَ معتدلةٍ في القوامِ، أو كانت يشوبُهَا لونان، الدمُ أو الكمودةُ[62] فإنَّ مُدَّةَ المريضِ لا تطولُ وأمرهُ بشرٌّ لا محالة، فإنْ كانت سوداء أو خضراء فإنَّهُ لا يتجاوزُ عشرينَ يوماً.

The Imam Hippocrates said, "Whoever has consumption, and on his shoulder appears a seed that resembles the shape of purslane; he is going to die after fifty two days."

وقال الإمامُ أبقراط: من كان به سلٌّ وظهرَ على كَتِفِهِ حبّةٌ كأنَّها الباقلى؛ ماتَ بعدَ اثنينِ وخمسينَ يوماً.

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[60] A hectic fever was a fever occurring in a major organ. See Pormann and Savage-Smith, 57.

[61] This word is unclear in the manuscript, and could also be read as "*al-sharī min al-sil.*" This would translate as "uriticaria (hives) due to consumption." I have chosen the above reading because it is followed by a more advanced stage of consumption.

[62] تغير اللون وذهاب صفائه(كتاب الماء – الجزء الثالث ص: 177). - The word *Kamūda* implies a dark, muddy, or "swarthy" color (Wehr, 984, *Kitab al-Mā'*, v.3, 177). The author here is most likely referring to the dark black color of dried and dead blood cells.

Another disease that is incurable is the swelling of the chest before puberty, if it results in kyphosis. Hippocrates said, "Whoever develops kyphosis, with asthma and coughing, before they grow pubic hair then they will die." He (al-Majūsī) said in *al-Kāmil*(The *Complete Book of the Medical Art*)[64], "they will die quickly."

Warning: If the suppuration takes place from the organs of the chest other than the lungs, and the body is without fever, then it is not incurable. Once, in Cairo of Egypt, a young man from upper Egypt came to me with this disease, and he coughed out a vast amount of repugnant purulent sputum, approximately 3 pounds in 24 hours, and he was extremely weak. I treated him with † myrrh† treatment, and did not think recovery was possible, an instant recover, and it was † the elixir of life, the cold medicine that differentiates between sickness and health, fenugreek mixed with

وورمُ الصدرِ قبل الحُلْمِ إذا أوْجَبَ حدْبَةً[63]، قال أبقراط: من أصابهُ حدبةٌ مع ربوٍ وسعالٍ قبلَ أن يَنْبُتَ الشعرُ في العانةِ فإنَّه يهلكُ، وفي الكامل: يموتُ سريعاً.

تنبيه: لو كان القيحُ حاصلاً من غيرِ الرئةِ من أعضاءِ الصدرِ، والجسدُ سليمٌ من الحمَّى، فإنَّهُ غيرُ ميؤوسِ الشفاءِ. ووقعَ لي مرَّة بمصرَ القاهرة مع رجلٍ من الصعيدِ هذا المرضُ. وكان شاباً ونفثَ قيحاً في غايةِ النتنِ والكثرةِ نحوَ ثلاثةِ أرطالٍ في اليومِ والليلةِ وكان في غايةِ الضعفِ ثم عالجْتُهُ بعلاجٍ †مر[65]† كنتُ لا أظنُّ به البرءَ †برءةً† واقفةً وهو†

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[63] الحدب هو خروج الظهر ودخول الصدر والبطن(القاموس المحيط ص: 93).—While most studies have defined *ḥadab* as "kyphosis" (see glossary), a more appropriate term may be "the protuberance of the back outward, with the depression of the chest inward" (*Al-Qāmūs al-Muḥīṭ*, 93). While I have adopted kyphosis as a translation of a medical condition, the word *ḥadab* most likely had a wider implication.

[64] This is most probably a reference to 'Alī ibn al-'Abbās al-Majūsī's famous book *Kitāb Kāmil al-ṣinā'ah al-ṭibbīyah* (The *Complete Book of the Medical Art*). Alī ibn al-'Abbās al-Majūsī (fl. 949-982/338-372), known to Europeans as Haly Abbās, lived and worked in Persia under the patronage of 'Adud al-Dawlah Fana-Khusraw, the ruler of Persia and Iraq from 949 to 983. The *Complete Book of the Medical Art* is the only treatise known to have been written by him. See Emily Savage Smith, "Bibliographies." Accessed (01-15-2008). <http://165.112.6.70/hmd/arabic/bioR.html>

[65] الكتابة غير واضحة و الإحتملات الأخرى لقراءة هذه الكلمة تتضمن:" سمر" أو " سهر".- Other possible readings for this word include *samar* (conversation, Acacia pirocarpa), or *sahr*(vigil, wakefulness).

[66] الفاروق هو الدواء الذي يفروق بين المرض و الصحة (القاموس المحيط ص:1183). انظر الهامش رقم 70 لمزيد من المعلومات عن هذا الدواء. الكتابة غير واضحة و الإحتملات الأخرى لقراءة هذه الكلمة تتضمن: "الغراق" أو "المغراق."

Al-Fārūq is a medicine that distinguishes between sickness and health (*Al-Qāmūs al-Muḥīṭ*, 1183). See footnote 70 for more information on this drug. The writing is unclear and other possible readings include *al-gharāq*(drowning, extravagance).

[67] الكتابة غير واضحة و الإحتملات الأخرى لقراءة هذه الكلمة تتضمن: "التابعة" او "القابضة."—The writing is once again unclear, and other possible readings include *al-tābi'a*(consequence, effect, result) or *al-qābiḍa*(catching, clawing).

dates, for his day. †

Hippocrates said, "Pneumonia or pleurisy will lead to purulence, and if the color[of the purulence] does not turn clear in forty days, at least once, from the day that he started coughing purulent matter, [the patient will develop] consumption."

Chapter 5: The Diseases of the Heart and Stomach that have no cure.

Regarding diseases of the heart [that have no cure]: Severe tachycardia that leads syncope, tachycardia that is similar to blood pouring into the bottom of the heart, all at once, and then leads to syncope, inflammation (pericarditis) of the heart, and cold inflammation(swelling) of [the heart]. All of these [diseases] are deadly.

المفراق[66] الباردة النابضة[67] فيرة [68] ليومه.[69]†

قال ابقراط آلَ الحالُ من ذاتِ الجنبِ أو ذاتِ الرئةِ إلى التقيُّحِ، فإنَّه إن لم ينقَ في الأربعين يوماً من اليومِ الذي انجزتْ فيه المدةُ إلاّ مرةً، إلى السلِّ، انتهى.

الفصلُ الخامسُ في الأمراضِ التي لا برؤَ لها بالقلبِ والمعدةِ

فأمَّا أمراضُ القلبِ فمنها الخفقانُ الشديدُ المؤدِّي إلى الغشي، والخفقانُ الذي يُشْبِهُ دم انصبَّ إلى أقصا[70] القلبِ دفعةً ثم عَقِبَهُ غَشْيٌ، والورمُ الحادثُ فيه، وكذلك الورمُ الباردُ وهذه كلُّها قتّالةٌ.

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[68] فيرة: حُلْبة و تمر يُطبخ للنفساء(كتاب الماء – الجزء الثالث 126).و على كل حال الكتابة غير واضحة و الإحتملات الأخرى لقراءة هذه تتضمن :" فتر" او "فئر."

Al-fira is fenugreek mixed with dates. Fenugreek is trigonella foenum-graecum, a tonic prepared for women in childbed(*Kitāb al-Mā'*, v.3, 126). However, the writing is unclear and other possible readings include: *fatara*(weakness, languor), and *f'r*, which could be a misspelling of *fā'r*(mouse).

[69] ممكن قراءة هذه الجملة مرة ثانية بعد الأخذ بعين الاعتبار أن الترياق المصري المشهور كان يسمى "الترياق الفاروق". إذا من الممكن أن يكون استخدام المؤلف لكلمة "مفراق" هو للصلة لهذا العقار الذي حُضِرَ من بشرة الأفعى أو من بشرة الزاحف السام، و كان يعتبر عقار مذهل في القرن السادس عشر و السابع عشر. إذا كان الكاتب كتب سهوا "سهر" بدلاً من "سحر" فن الممكن القرءة كما يلي: " ثم عالجْتُهُ بعلاجٍ †سحر† كنتُ لا أظنُّ به البرءَ †برءةً† واقفةً وهو† المفراق الباردة القابضة فئر ليومه.† "

A different reading of this sentence can be considered in light of the fact that the famous Egyptian theriac was called *al-tiryāq al-Fārūq*. Then our author's use of the word *mufrāq* could be reference to this drug, which was prepared from a viper's or venomous reptile's flesh, and considered a wonder drug in 16th and 17th centuries. If the scribe accidentally wrote *sihr* for *siḥr* then the following translation can be understood: " I treated him with a † magical† treatment, and I did not think recovery was possible, an instant recovery, and it was the cold theriac, [prepared from a snake] that had captured a mouse for its day." For more on *al-tiryāq al-Fārūk* see Gary Leiser and Michael Dols, "Evliya's Celebi's Description of Medicine in 17thc. Egypt: Part One," *Sudhoffs Archiv 71*(1987): 209-213.

[70] "قصا" حسب نسخة المخطوط – The word was written "*qaṣā*" in the text.

[Also untreatable] is repetitive syncope. Hippocrates, may God the Exalted have mercy on his soul, said, "whoever experiences repetitive episodes of severe syncope, without any apparent reason, then they will die suddenly." I experienced this once with a young lad from amoung the relatives of the Shiekh Zayn al-Marṣafī, may God the Exalted have mercy on his soul.[71] He had extremely atrocious and severe tachycardia, and his situation was presented to me at the hospital. I told his uncles, I will not leave his side, until he improves with time. [I only said] that because I did not want to break his hope. Only a short time passed before [the patient] passed away to the mercy of God, the Exalted.

والغشيُ المستحكِمُ، قال أبقراط رحمهُ اللهُ تعالى: ومن يُصِبْهُ الغشيُ الشديدُ مراراً كثيرةً من غيرِ سببٍ؛ فإنَّهُ يموتُ فجأةً. وقدْ وقَعَ لي مرَّةً مع شابٍ من أقاربِ الشيخ زين المرصفي رحمهُ اللهُ تعالى أنَّه كانَ به خفقانٌ شديدٌ فاحشٌ للغايةِ وعُرِضَ أمرَهُ عليَّ باللبيمارستان فقلتُ لأخوالِهِ ألاَّ أتركَهُ حتى يعتدلَ للزمنِ، وأردْتُ بذلك عدمَ كسرِ خاطرِهِ، فما لَبِثَ إلاَّ مُدَّةً يسيرةً وانتقلَ بالوفاةِ إلى رحمةِ اللهِ تعالى.

Reharding the diseases of the stomach [that are incurable]: The perforation [of the stomach wall] and the atrophy of it fibrous tissue, are both lethal. Hippocrates said, "if a [patient] has stomach pain, and a rough shape appears on the right leg resembling a blister, and the patient has a desire for sweets, then he will die on the twenty forth day."

وأمَّا أمراضُ المعدةِ: فانخراقُهَا وتَهَلْهُلُ نَسْجِ ليفها وهما قاتلان.قال أبقراط: إذا ظهرَ مع وجعِ المعدةِ على الرِّجلِ اليمنى شيءٌ شبيهٌ بالنفاخة، خشنٌ، وكانَ صاحبُ الوجعِ يشتهي الحلوياتِ، فإنَّهُ يموتُ في اليومِ الرابعِ والعشرين.

Dyspepsia (indigestion) has no cure if [the patient] develops seeds (pimples, pustules) shaped like a chick pea on their eyes and the patient becomes green or red, and is afflicted with mental confusion.

والتُخْمَةُ إذا ظهرَ على عينِ من أصابهُ بُثُورٌ تشبه الحمص واخضرّ واحمرّ واعتراهُ مع ذلك اختلاطُ العقلِ؛ فلا برءُ له.

Similarly, eructation (hiccough) is [incurable]. If it is associated with swelling on

وكذلك الفُواقُ ورم في الجانبِ الأيمنِ

[71] Muḥammad bin Muḥammad(Aḥmad) Zayn Al-'ābidīn al-'Ash'arī al-Ghumarī, also known as Basīṭ(Sabiṭ) al-Marṣafī, was a Egyptian Sufī Shaykh and Shāf'ī jurist. He wrote many books. See Kaḥḥālah, op cit., v. 11, 257. Also See Ziriklī, op. cit., v. 7, 58. See also his work Muḥammad ibn Muḥammad Marṣafī, *Dā'ī al-falāḥ ilá subul al-najāḥ*, Taḥqīq Muḥammad 'Abbās Ḥilmī (Al-Qāhirah : Wizārat al-Awqāf, al-Majlis al-A'lá lil-Shu'ūn al-Islāmīyah, Markaz al-Sīrah wa-al-Sunnah, 2001): 8.

the right side of the abdomen, and the severity of hiccough increases, then the patient will die before sunrise. [Hippocrates] also said, "That whoever experiences cramping, tetanus[73], and vomiting with hiccough, and then becomes dazed, will die."

Similarly, whoever starts to vomit and is overtaken by dryness (or the vomit becomes dry)[75], and [the disease] becomes stronger, it is indeed an extremely exasperating situation. Similarly [exasperating] is [the patient] throwing up green repugnant vomit. All of these are lethal, and God knows best.

واشتدَّ الفواقُ ماتَ العليلُ قبلَ طلوعِ الشمسِ. وقالَ أيضاً: مَنْ كان به مع الفواقِ مغص [72] وكزازٌ وقيءٌ ثم ذَهَلَ عقلهُ ماتَ.

وكذلك إنْ حدثَ عنده[74] استفراغٌ و كانَ عن يبسٍ واستحكمَ وإلاَّ فهو عَسِرٌ جداً، والقيْءُ الأخضرُ المنتنُ، فهذه كلُّها قتَّالة والله أعلمُ.

Chapter 6: The Diseases of the Liver that Have no Cure.

Kidney pain [is incurable], if it is accompanied by a severe itch in the occipital area and the toes of the feet, pimples on the [patient's] posterior neck that look like purslane. Death in [this patient] is estimated within five days, as the Imam Hippocrates stipulated. He said, "[this disease] is accompanied with difficult and frequent urinating."

Similarly [incurable], is the inflammation of the liver, if it is accompanied with diarrhea. Ascities [also has no cure], if it

الفصلُ السادسُ في ذِكْرِ الأمراضِ التي لا بُرْءَ لها بالكبد.

وهي إمَّا إذا حدثَ بها وجعٌ وكانَ مع ذلك حكَّةٌ شديدةٌ في القَمَحْدَوَةِ[76] وإبهاميِّ الرجلين وظهرَ في القفاء بثرٌ شبيهٌ بالباقلا، فالموتُ في هذا متوقَّعٌ إلى الخامسِ كما نصّ عليه الإمامُ أبقراط. قال: وهذا يعتريه عُسْرُ البولِ مع تَقْطِيْرِهِ.

كذلك وَرَمُهَا إذا قارنَهُ إسهالٌ. وكذلك

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[72] حسب نسخة المخطوط: "مغس."—The word was written "*Maghs.*"

[73] By tentanus the author implies a state of continuous muscular contraction.

[74] الكلمة مكتوبة بشكل التالي "عن ده."—The word is written in the following manner "*'in da hu.*"

[75] It is unclear whether "dryness" is a description of the vomit or the patient. In any case he seems to suggest that patient has vomited enough to become dry or dehydrated.

[76] القَمَحْدَوَة: "مؤخرة الرأس، وحسب كتاب الماء فهي ما أشرف على القفا من عظو الرأس"(الجزء الثالث ص: 223).

Al-qamaḥdawa refers to the occiput, or the external occipital eminence (Sina, 135).

becomes chronic, and the patient is advanced in age, or if the [ascities] is accompanied with acute disease consisting of diarrhea, cough, and fatigue. He (al-Kāzarūnī) said in *al-Mughnī*(*The Ultimate in Commentaries on the Avicenna's Cannon*),[78] "if the cough gets stronger, and [his/her] strength weakens, and is unable to control his/her defecation, there is no hope in recovery."

I said, "this disease happened to a man of Sinān Bāshā's in Egypt, the year 980. The doctors convened over him [to discuss his treatment] and they treated him with one of their treatments. I, however, had warned them of his death, three months prior, and what I predicted happened, may God the Exalted have mercy on his soul.

Similarly, the ulcers that happen to the bodies of those who have ascities [have no cure].

Chapter 7: The Diseases of the Gallbladder, Pancreases, Kidneys, and Bladder that have no Cure.

Regarding the diseases of the gallbladder, they are easier [than the rest]. [Hippocrates] said, "if a patient's urine resembles [the color] of a grape, with a depression in the stomach, coupled with a fever, chills, and weakness in speech, then

الاستسقاءُ الزقّي إذا أزمنَ وكانَ صاحبُهُ قد طَعَنَ في السنِّ أو قارنَهُ مرضٌ حادٌّ وكانَ مع إسهالٍ وسعالٍ وضعفِ القوَّةِ، قال في المغني فإن قَوِيَ السعالُ وضَعُفَتْ القوَّةُ وسهلَ الطبعُ،[77] فلا مطمعَ في العافيةِ.

قلتُ: وقد وقعَ هذا المرضُ لرجلٍ من جماعةِ سِنَان باشا الوزير بمصر سنة 980، رجع عليه الأطباء ثم يعالج بعلاجِ واحدٍ منهم، وقد كنتُ أنْذَرْتُ بذلك قبلَ موتِهِ بثلاثةِ أشهرٍ ثمَّ كان ما قلتُهُ، رحمهُ اللهُ تعالى.

وكذلك القروحُ الحادثةُ بالأبدانِ المستسقين.

الفصلُ السابعُ في ذكرِ ما يحدثُ منها بالمرارةِ والطُحالِ والكِلى والمثانةِ.

فأمَّا الذي بالمرارةِ فأيْسَر، قالَ: إذا كانَ بولُ صاحبِه شبيه بالكَرْمَةِ مع غَوْرٍ في الباطنِ وحمَّى وقَشْعَرِيْرَةٍ وضَعْفٍ في الكلامِ؛ وهذا يقتلُ إلى الرابعِ والعشرين، وكذلك اليرقانُ

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[77] يقال: طبيعة هذا ليّنة، أي: برازه"(كتاب الماء ص: 452). — *Al-ṭab'*: feces. See *Kitāb al-Mā', v. 2, 452.*

[78] This book must be *Kitāb al-Mughnī fī sharḥ al-Mūjiz* (The Ultimate in Commentaries on the Mūjiz) by Sadīd al-Dīn Muḥammad ibn Mas'ūd al-Kāzarūnī (d. 1357/758 H). "This book appears to have been very popular, judging from the numerous copies of the treatise that are preserved today." See Kāzarūnī in Emily Svage-Smith, "Bibliographies." Accessed 10/25/07. <http://www.nlm.nih.gov/hmd/arabic/bioK.html>

this [disease] will kill [the patient] within the next twenty four days." Similarly [incurable], is jaundice caused by the obstruction of ducts [of the gallbladder, i.e. billary duct] with a piece of muscle or wart.

الحادثُ عن سدِّ لحمٍ أو ثؤلول [79] في المَجْرَى.

Regarding the diseases of the pancreas that have no cure: Pain in the pancreas [is incurable], if it is as Hippocrates, may God the Exalted have mercy on him, has described: "Whosoever has a pain in the pancreas, and loses his appetite, and red blood flows from him [in his urine][80], and he develops white ulcers on his hands, then he will die on the next day."

وأمَّا الذي بالطحالِ فَوَجَعُهُ إذا كان كما قالَ أبقراط رحمهُ اللهُ تعالى: منْ كانَ بهِ وَجَعٌ في الطحالِ وسقطتْ شَهْوَتُهُ وَسَالَ منهُ دَمٌ أحمرٌ وَظَهَرَ بِيَدَيْهِ قروحٌ بيضٌ؛ ماتَ العليلُ في اليومِ الثاني.

Regarding the diseases of the kidneys [that are incurable]. Chronic indurate inflammation of the kidneys [is incurable], for some patients. Similarly, renal pustules, if they are left untreated for long time, in the elderly [are incurable].

وأمَّا الذي بالكلى فهو الورمُ الصلبُ المزمنُ عند بَعْضِهِم، وكذلك جَرَبُهَا إذا أزمنَ ممَّنْ قد طَعَنَ في السنِّ.

Regarding the diseases of the bladder [that are incurable]. A painful [bladder], if it is associated with swelling under the left armpit resembling a quince, and remains as such till the seventh day then the patient will die on the fourteenth day, as the Imam Hippocrates, has stipulated. Likewise, the inflammation of the bladder, if it enlarges until it becomes an abscess, and defecation is obstructed, and there is no purulence in the urine, will also kill by the seventh day.

وأمَّا الذي بالمثانةِ فَوَجَعُهَا إذا كانَ معه ورمٌ تحتَ الإبْطِ الأيْسَرِ كالسَفَرْجَلَةِ وكانَ ذلك في السابعِ، فإنَّ العليلَ يموتُ في الرابعَ عشرَ كما نصَّ عليه الإمام أبقراط. وكذلك وَرَمُهَا إذا عَظُمَ حتى صارَ دبيلةً، واحتبسَ معه الطبعُ، ولم يكن تقيُّحٌ في البولِ أيْ؛ فإنَّه أيضاً قاتلٌ في السابعِ.

Similar, difficulty urinating, if it is accompanied with tenesmus, kills on the seventh day, unless [the patient] develops a

وكذلكَ عُسْرُ البولِ إذا أعقَبَهُ زَحِيْرٌ[81] قاتلٌ في السابعِ، إلاَّ أنْ تَعْرِضَ حُمَّى ويحصلَ

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[79] حسب نسخة المخطوط: "تاتول" و هي مهجئة على هذا النحو في كامل النص — The word was spelled *Tātūl*, and is consistently spelled like this throughout the text.

[80] The author does not specifically mention where the blood flows from.

[81] While the general definition of *zaḥīr* in most dictionaries is dysentery(see glossary), in the above context, "tenesmus" (straining to urinate or defecate, without the ability to do so) is a more proper

إدْرَارُ بولٍ شديدٍ. وكذلك إذا حصلَ في مجراها سدَّةٌ من لحمٍ نابتٍ فيها ونحوه.

fever and starts to urinate profusely. The obstruction of the urinary pathways, caused by a muscle embolus or the like, that has grown in [the urinary tract] [is also incurable].

وأمَّا سَلَسُ البولِ الحاصلُ لها إذا كانَ بالكهولِ فليس بميؤوسٍ الشفاءِ، لكنَّه عَسِرُ البرءِ جدًّا، قالَ صاحبُ المُغني: لا يكادونَ يخْلُصُونَ منهُ لأنَّ الأمراضَ المُتَطَاوِلَةَ الحادثَةَ بالكهولِ عَسِرَةُ العلاجِ انتهى. قلتُ: والشيوخُ، إذ انتظامُ أمراضِهم أعْسَرُ وقالَ في الكاملِ: وينبغي أنْ تعلمَ أنَّ مَنْ حدثَ به وجعٌ في الكِلى مِنَ الكهولِ فإنَّه لا يكادُ يبرأُ منه لأنَّ ما يعرضُ من الأمراضِ المتطاولةِ بالكهولِ في أكثرِ الأمرِ يموتونَ وهي بهمْ؛ كما قال أبقراط انتهى.

Regarding urinary incontinence: if it happens in middle aged adults, then it is not impossible to treat, but it is extremely hard to cure. The author (al-Kāzarūnī) of the *al-Mughnī* stated, "Middle aged adults with any disease that is long lasting (i.e. takes a long time to cure), will not have enough time to rid themselves of the [disease], because such diseases are difficult to cure." I must add that likewise, recovery in the elderly is very difficult, if their diseases become piled upon each other. He(al-Majūsī) said in *al-Kāmil*, "It is necessary for you to know that if middle aged adults experience pain in their kidneys, they will not be able to fully recover from it, because middle aged adults with long lasting diseases, most of the time, reach the age of their death, and the disease still plagues them,[82] as Hippocrates had stated."

تنبيه: ومِن سلسِ البولِ ما يكونُ مع حرارةٍ شديدةٍ وهُزالٍ في البدنِ، وربَّما خَرَجَ البولُ عقبَ شربةٍ، وهذا (المرضُ) لا يجوزُ أن يُعطي صاحبهُ الأدويةَ الحارَّةَ لأنَّها تؤديه للدق.

Warning: [If your patient has] urinary incontinence that is accompanied with a high fever and muscle atrophy, and if incontinence follows a drink (or a laxative),[83] then you are not allowed to give a patient with this disease, medications of hot temperament, because it will lead him to develop a hectic fever.

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translation. This translation is supported by Kamal's definition(See Kamal, *Encyclopaedia of Islamic Medicine*, 852).

[82] The disease here does not kill patient, but takes such a tremendously long time to be cured of that it is more likely the patient will live his course and die before he can rid himself of the disease.

[83] An alternative meaning to *sharba* or *shurba* is laxative, medicine, or soup.

Chapter 8: The [Diseases] that happen in the intestines and anus.

Let it be known that diarrhea is one of diseases that have no cure, only if, when you feed the patient, the food does not strengthen his pulse. The author (Ibn Nafīs) of *al-Mūjaz*[84] stated, "if you feed the patient with diarrhea, and the food does not strengthen his pulse, then do not treat him."

Similarly [incurable], is the perforation of the intestines, and the oozing of froth and spit from them, caused by ulcers in the intestines. Likewise, intestinal abrasion followed by an acute illness is very destructive, and recovery is rare (lit. victory is rare).

Just as [destructive], is tarry black diarrhea (melena) that boils on the earth. If it happens at the beginning of a disease, is accompanied by swelling of the extremities, the patient is an elderly man, and enemas and medications are not successful, it is most likely lethal.

This exact disease afflicted one of the princes of Egypt during the year of nine hundred and eighty. Every time the [diarrhea] subsided, it would return. It would not cease. He was in a prison of defecation, in extreme pain, and unable to sleep. This man used to relentlessly demand to drink cold water, and every time he drank it, the [diarrhea] increased, may God the Exalted

الفصلُ الثامنُ في ذِكْرِ ما يَحْدُثُ منها بالأمعاءِ والمقعدةِ

ليُعلمَ أنَّ من الأمراضِ التي لا بُرءَ لها الإسهالُ إذا غُذِيَ صاحبهُ فلم يَزِدْ الغذاء في نبضهِ قوةً. قالَ صاحبُ الموجزِ: وإذا أغذيتَ المسهولَ فلم يزدْ الغذاء في نبضهِ، فلا تعالجْهُ.

وكذلك انتقابُ الأمعاءِ وخروجُ التفلِ[85] منها لقروحٍ بها، وإذا حصلَ فيها سحجٌ عقبه مرضٌ حادٌّ؛ فهو رديءٌ قليلُ الإفلاجِ.[86]

وكذلك الإسهالُ السوداويُّ الذي يغلي على الأرضِ؛ إذا وقعَ في أوّلِ الأمراضِ، هذه جميعها قاتلةٌ إذا حدثَ معه تورّمٌ في الأطرافِ وكانَ يطاعنُ في السنِّ ولم تنجحْ فيه الحقنُ والأدويةُ.

وقدْ وقعَ في هذا المرضُ بعينهِ لرجلٍ من أمراءِ مصرَ، عام ثمانين وتسعمئةٍ، وكانَ كلَّما سكنَ وقتاً عاوده آخر. وكان لا يزالُ معتقلَ الطبعِ شديدَ الألمِ عديمَ النومِ، وكانَ هذا الرجلُ شديدَ الطلبِ لشربِ الماءِ الباردِ، وكلَّما شربهُ ازدادَ له، رحمه الله تعالى.

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[84] This is most likely Ibn Nafīs's *Mūjaz al-Qanūn*.

[85] التفلُ: البصاق والزبد(القاموس المحيط، ص: 1254). ---*Al-taflu:* saliva and froth(*al-Qāmūs al-Muḥīṭ*, 1254).

[86] الإفلاج: الظفر والفوز(القاموس المحيط، ص: 258). —*Al-'Iflāj* : victory and triumph (*al-Qāmūs al-Muḥīṭ*, 258).

have mercy on his soul.

Ileus, if it is accompanied by frequent urination, is [incurable]. The Imam Hippocrates, may God the Exalted have mercy on his soul, said "The patient with this disease will die within a week." He (al-Kāzarūnī) said in *al-Mughnī*, "this is a gruesome and dangerous disease. Most of the time, the patient can survive it, because the putrescent intestinal excrements, ascend up to the stomach, and then exit through the mouth." I must add that colic[88] is likewise.

He (al-Majūsī) said in *al-Kāmil*, "*al-Darab*," if its contents are bitter hot, or has a salty taste; it will erode the layers of the intestines. The patients with this disease will vomit various bitter (or bileous) humors. After that, they will vomit phlegmatic humors which flow from the viscous humors that coat the luminal side of [the intestines]. Then after that, they will vomit the fibers of the intestines, and [will vomit] something from the body of the intestines when part of the body [of intestines] sheds.[93] If the shredded vomit contains pieces of large meat, then

وكذلك إيلاؤس[87] إذا حدثَ معه تقطيرُ بولٍ. قالَ الإمامُ أبقراط رحمه الله تعالى: وصاحبُ هذا المرضِ يموتُ في أسبوعٍ. قال في المغني: وهذا مرض عظيم خطر لا يكادُ ينجو المريضُ منه لأنَّ الفضلَ المنتنَ يصعدُ إلى المعدةِ ويخرجُ من الفمِ. قلتُ: وكذلك القولنج.

قالَ في الكاملِ: والدربُ[89] إذا كانت موادُه حادَّةً مراريَّةً أو طعماً مالحاً يعقرُ طبقةَ الأمعاءِ؛ فأصحابُ هذه العلَّةِ يستفرغونَ أخلاطاً مراريَّةً مختلفةً، ومنْ بعدِ ذلك يستفرغونَ رطوبةً بلغميَّةً وذلك ممَّا هو† ينحدرُ[90]† من الأمعاءِ من الرطوبةِ اللزجةِ المطليَّةِ عليها من داخل، ثم يستفرغُ بعد ذلك أنخراطه وشيء من جسمِ المعاء وذلكَ عندما[91] † يتحدَّر[92]† شيءٌ

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[87] الكاتب أخطأ تهجئة الكلمة، و بالإضافة لذلك كتب الكلمة على سطرين: "إيلا—ورس" و الكتابة الصحيحة: إيلاؤس.
The scribe not only misspelled the word, but also wrote the word across two lines as such " *'Īlā ---wurus*." The correct spelling is *'Īlāū's*.

[88] Colic was a term used that could also implied intestinal obstruction. See Porrmann and Savage-Smith, 56.

[89] الدرب: داء يصيب المعدة فلا تكاد تقوى على هضم الطعام (كتاب الماء، الجزء الثاني،ص:72). -- A disease that afflicts the stomach, weakening it to the point where it can no longer digest food. See *Kitab al-Ma'*, v. 2, 72.

[90] قراءةٌ أخرى لهذه الكلمة هي:" يحذر" او"ينحذر." -- Possible alternative readings for this word are: "*yaḥdhr*" or "*yanḥadhr*."

[91] الكاتب كَتب "عند—ما" على سطرين. - The scribe wrote the word on two lines again as such *'and—mā*.

[92] قراءةٌ أخرى لهذه الكلمة هي:" يتحذر". -- An alternative reading for this word is *yatḥadr* .

[93] الكلمات "ينحدر" و" يتحدر" هما من أصل الجذر "حدر"، و من الممكن قراءتهما كـ "يحذر" أو "يتحذر" من أصل الجذر "حذر". لقد قمت باختيار الجذر " حدر " لأن الجذر "حذر" لا يحمل أي معنى في هذا السياق.
The words *yanḥadir* and *yataḥadar*, both from the root ḥadara, could both be read as *yaḥadhir* or *yataḥadhar*. I have chosen the former because the latter would have no meaning in this context.

من جسمها، فإنْ كانت هذه الخراطةُ قطعَ لحمٍ كبار، كان فيها تلفُ العليلِ لأنَّ ذلك يدلُّ على أنَّ جرمَ المعاءِ قد عَمِلَ فيه التآكلُ حتى بَلَغَ إلى الطبقةِ الثانيةِ من طبقاتها. ومثلُ هذه لا يمكنُ أن يبرأ، ثم يستفرغُ مِنْ بعد ذلك الدمَ عندما يتقيَّح أفواهُ العروقِ. انتهى.

within it is the destruction of the patient, because it indicates that erosion has eaten away at the body of the digestive system, until it reached the second layer of the [intestinal layers]. Such a state is impossible to recover from. Then after all this, [the patient] will start to vomit blood as a result of the development of ulcers at the orifices of the [blood] vessels."

وكذلك استرخاءُ المقعدةِ إذا كان حادثاً عن قطعِ العصبِ، وكذلك الباسورُ والباصورُ الخارقُ، والله أعلم.

The paralysis of the anus due to the severing of the nerve [to the anus] [is incurable]. Likewise, hemorrhoids and perforated hemorrhoids[are also incurable].[94] And God knows best.

الفصلُ التاسعُ في ذكْرِ ما يحدثُ منها بالقضيبِ والأُنْثَيَيْنِ والرحمِ.

Chapter 9: The [Diseases] that Happen in The Penis, Testicles, and Uterus.

أمَّا أمراضُ القضيبِ فنقصانُ الباهِ إذا كانَ سببَ رخاوةِ القضيبِ حدوثُ شيءٍ من جنسِ الفالجِ ولم يتقلصْ في الماءِ الباردِ. قالَ في المغني: فإنْ طالَ زمانُ هذه العلةِ وتبيَّنَ في العضوِ آثار[95] ضمورٍ فلا مطمعَ في علاجِهِ. انتهى. وكذلك اختلاجُ الذكَرِ إذا عرضَ لمَنْ به تشنُّجٌ، وانتفخَ البطنُ معه، وحصلَ عرقٌ باردٌ، لكنْ هذا قاتلٌ.

Regarding the diseases of the penis that [have no cure]: Decreased libido as a result of the flaccidity of the penis caused by a kind of paralysis, [characterized by] the inability of the penis to shrink in cold water.He (al-Kāzarūnī) said in *al-Mughnī*, "if this disease remains for a long time, and signs of atrophy appear on the organs, then there is no hope in treating it." Likewise is the twitching of the penis, if the patient experiences spasms, accompanied by a distended abdomen, and cold sweat. This disease, however, is deadly.

وأمَّا أمراضُ الأنثيينِ فالأدرةُ العانية عند

As for diseases of the testicles [that are incurable], the hernia of the pubic or pelvic

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[94] It is unclear as to why the author spells hemorrhoids two different ways here, but because the two words follow each other it is hard to believe that it was a mistake.

[95] حسب نسخة المخطوط: "ثار"، واعتقد أن الكاتب نسي ان يضع الألف. – The text reads "*thār*," but I believe that the author must have meant "*'āthār*."

area[96], according to Ibn Zuhr. He said, "This is the worst kind of hernia, and it is impossible to heal even in children, unless they follow what they directed to do [by doctors], because it is not caused except by the perforation of a tough membrane." I must add that the untreated hernia, especially in a person who has aged, or in a country like Egypt (may God protect it), where hernias occur often, [are also difficult to cure].

ابن زهر، قالَ: وهذه شرُّ الأدرِ ولا يمكنُ البرءُ حتى في الصبيانِ ما لم يُستَمَعُ ما يؤمرونَ به لأنَّها لا تنشأُ إلاَّ عن خَرْقِ غشاءٍ صُلْبٍ. والفتقُ المزمنُ خصوصاً بمن طعنَ في السنِّ أو ببلدةٍ يكثرُ فيها ذلك كمصرَ حرسها الله تعالى، قلت.

Al-Samarqandī said, "Hernias have no cure, except for the minor hernias that happen in young boys."

قال السمرقندي: والفتقُ لا برءَ فيه، إلاَّ يحصلَ بالصبيانِ في النزورِ. انتهى.

[Moving on] to diseases of the uterus [that have no cure]. Infertility [has no cure], if it is the result of obstruction caused by a wart or indurated swelling.

وأمَّا أمراضُ الرحمِ فالعقمُ إذا كان سببهُ سدَّةٌ في الرحمِ عن ثؤلول أو ورمٍ صلبٍ.

Likewise is natural infertility. According to al-Samarqandī, it can be distinguished by taking 7 pills of wheat, 7 [pills] of barley, and 7 pills of purslane, and placing them in a ceramic pot. Then, one member of the couple should urinate on it, and leave it for seven days. If it sprouts, then the sterility is not from his/her side.

وكذلك العقمُ الطبيعيُّ، وعلامتُهُ كما قال السمرقندي أنْ يُؤْخَذَ سبعُ حبَّاتِ حنطةٍ وسبعُ شعيراتٍ وسبعُ حبَّاتِ باقلا وتُوضعُ في إناءٍ خزفٍ ويبولُ عليه أحدُ الزوجينِ ويُتْرَكُ سبعةَ أيَّامٍ، فإنْ نبتَ فلا عقرَ من جهتِهِ.

Similarly [impossible to cure] is the infertility that is the result of the severing of the root behind the ear.

وكذلك العقمُ الذي سببهُ قطعُ العرقِ الذي خلفَ الأذنِ.

Al-Samarqandī said in his *al-'Āsbāb wa al-'Alāmāt (The Book of Causes and Symptoms)*, "Infertility caused by certain characteristics of the sperm [has no cure]. For example, if the sperm outbalances (dominates) the water. " The cancer of the uterus [also has no cure]. And God knows best.

قالَ السمرقندي في الأسبابِ والعلاماتِ: وكذلك إذا كان سببهُ خاصيَّةٌ بالمني، كما إذا طغى المنى على الماءِ. وكذلك السرطانُ الحاصلُ بالرحمِ واللهُ أعلمُ.

[96] I understood this as being a femoral hernia.

Chapter 10: The Diseases of the External Organs that have no Cure.

Let it be known that among the diseases that have no cure is chronic kyphosis. Likewise, spina ventosa[97] [also has no cure]. [Also impossible to cure] is the kyphosis that develops as result of spasms (convulsions), and it is deadly. Kyphosis that appears in those who have coughing and asthma, before they grow any pubic hair, is deadly, as the Imam Hippocrates had stated.

He (al-Kāzarūnī) said in *al-Mughnī* it is stated that, "The dislocation of the socket, if it is a forward [displacement], is called *Naqṣa'*, and there is no cure for it and for its outer manifestations, whether it has remained untreated for a long time, or not."

Elephantiasis that has remained untreated [has no cure]. Taqī al-Dīn [99]said, "Deep-rooted [elephantiasis] has no cure," and Ibn Zuhr said "The treatment of elephantitis is almost impossible."

Likewise, varicose veins [also has no cure], if it has remained untreated for long time, but if not, then no [you can cure it.] Ibn Zuhr said, "Extended treatment of [varicose veins] may be successful."

الفصلُ العاشرُ في الأمراضِ التي لا يمكنُ برؤها بالأعضاءِ الظاهرةِ.

ليُعلمَ أنَّ من الأمراضِ الميؤوسةِ الشفاءِ الحدبةُ المزمنةُ. وكذلك رياحُ الأفرشةِ. والحدبةُ الحاصلةُ عن التشنُّجِ وهي قاتلةٌ. وكذلك إذا حصلتْ بمنْ أصابهُ سعالٌ أو ربْوٌ قبل أنْ ينبتَ له شعرُ العانةِ، قاله الإمامُ أبقراط: وهو قاتلٌ.

قال في المغني وزوالُ النقرةِ، إمَّا إلى قدام ويسمَّى النقصع[98]، وهذا لا برء له وظاهرهُ أزمنَ أمْ لا.

وكذلك داءُ الفيلِ إذا أزمنَ. قالَ †تقي الدين†: والمستحكمُ منه لا يبرئُ. وقال ابن زهر: علاجُ داءِ الفيلِ كادَ أنْ يكونَ من الممتنعِ.

وكذلك الدوالي إذا[100] أزمنتْ، أمَّا إذا لم تزمنْ، فلا. قال ابن زهر: لكنَّ التمادي على علاجها ربَّما أنجحُ.

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[97] A condition occasionally seen in tuberculosis or, in which there is absorption of bone bordering the medulla, with a new deposit under the periosteum, resulting in a change that is suggestive of bone being inflated with gas.

[98] كُنْتُ غير قادر على إيجاد المعنى لهذه الكلمةِ ولم اجد قراءةً أخرى لها —I could not find a definition for this word or an alternative reading.

[99] النص غير واضح، لذلك أنا غير متأكد من هذه القراءة.و لم أستطع إيجاد قراءةً أخرى لهذه الكلمة. -- The text is unclear, and I am not sure of this reading. I could not think of any other possibilities.

[100] الكاتب نسي أن يضع الألف. —There is a forgotten *'ālif*.

The complete dislocation of the back vertebras [has no cure], and death is around the corner in such a case.

وكذلك خرزاتُ الظهرِ إذا حَصلَ لها الزوالُ التامُ، والموتُ مطلٌّ في هذا.

Similarly, the dislocation of the hip, if it is left untreated for a long time [has no cure]. He(al-Majūsī) stated in *al-Kāmil*, " Whosoever [has a dislocated hip] and it remains for long time, then he cannot return to his [old] state and will absolutely not recover." Likewise, hip pain that is accompanied by severe redness of the thigh, and an increased desire for green herbs [has no cure]. According to [the authorities][101], death [in this disease] is expected within 25 days.

وكذلك الفكُّ الحاصلُ في الوركِ إذا أزمنَ. قال في الكامل: وأمَّا من طالَ به فإنَّه لا يرجعُ إلى حالهِ ولا يبرأُ البتَّة. وكذلكَ وجعُ الوركِ إذا ظهرَ بالفخذِ حمرةٌ شديدةٌ واشتهى العليلُ البقولَ، قالوا: والموتُ يُتَوَقَّعُ إلى الخامسِ والعشرين.

Warning: if you find on the knee of a patient something that looks like a black grape, with feverish inflammation surrounding it, then do not treat him. He will perish quickly, perhaps reaching fifty days before dying.

تنبيه: إذا وجدتَ بركبةِ مريضٍ شيئاً مثلَ العنبِ الأسودِ محموماً حولَهُ فلا تعالجْهُ فإنَّه يهلكُ عاجلاً، وربَّما بلغَ خمسينَ يوماً ومات.

Among [the diseases] that have no cure, is sciatica, if it goes untreated and the leg wastes away, [the patient] develops a limp, and the femoral head moves out of it place as due to the decay of the ligamental structure by the septic humors located in the acetabulum.

ومن التي لا برءَ لها: عِرْقُ النسا إذا أزمنَ وهزلتْ منه الرجلُ وحدثَ منه العراجُ وخرجت الرمَّانةُ من محلِّها بسببِ فسادِ جوهرِ الرِّباطِ عن عفونةِ الرطوبةِ الكائنةِ في الحُقِّ.

I witnessed in Egypt, a person who was afflicted with this same disease, and he remained as such for approximately three years or † four†[102], and he healed from that. Perhaps, and God knows best, the decaying of the ligaments did not occur, but rather they only became loose.

قلتُ: وقدْ رأيتُ في مصرَ من حصلَ له مثلُ هذا المرضِ، ومكثَ نحو ثلاث سنوات أو† أرابع† وبرءَ من ذلك، فالعلَّةُ واللهُ أعلمُ لم يحصلْ له فسادٌ في الرباطِ، وإنَّما حصلَ ارتخاؤُهُ فقط.

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[101] The literal translation of *qālū* is "They said." However, I have translated it as "According to the authorities," because it is obviously referring to past medical authorities.

[102] النص غير واضح، و لم أستطع إيجاد قراءةً أخرى لهذه الكلمة. -- The word was rather unclear and I could not come up with any other possibilities.

When viscous phlegm falls into the joints, and remains there a long time [it becomes incurable]. He (al-Majūsī) said in *al-Kāmil*, "If [viscous phlegm] remains in the joints for a long time, its dense and thick properties will absorb disease, until rocks and caculi precipitate from it, like the stones that precipitate in the gallbladder. If the following happens, and it happens all the way, then there is no cure for it."

وكذلك ما يقعُ في المفصلِ من بلغمٍ لَزِجٍ وطالَ مُكْثُهُ، قال في الكامل: فإنَّه إذا طالَ مُكْثُهُ في المفصلِ فإنَّ غِلْظَهُ ولزوجَتَهُ مز[103] داء حتَّى يتولَّدَ منهُ حجارةٌ وحصاةٌ كالذي يتولَّدُ في المثانة. وإذا كان كذلك فليسَ إلى برءِ ذلك ،إن حصلَ، سبيلٌ البتَّةَ. انتهى.

Part 3

Part 3 is on the diseases that are not specific to any particular organs, like inflammation, pustules(pimples), and general diseases that have no cure and carry signs of death.

البابُ الثالثُ

البابُ الثالثُ في ذكرِ الأمراضِ التي لا تختصُّ بعضوٍ معيَّنٍ كالأورامِ والبثورِ ونحوِهَا من الأمراضِ العامَّةِ التي لا يمكنُ برؤه وحملَ من علاماتِ الموتِ.

To know that acute inflammation causes the decay of organs. If the decay is in its early stage, and has not yet distorted the condition of the organ, and its ability to move, then it is called gangrene. However, if the [inflammation] has decayed the organ to the point where it ceases to function, then it is called *saqāfals*, meaning the death of the organ, according to present day scholars.[106] On the other hand, ancient scholars, call both

ليُعْلَمَ أنَّه قد يحصلُ عن[104] الورمِ الحادِّ فسادُ العضوِ، فإنْ كان الفسادُ في ابتدائه، ولمْ يفسدْ عن حالةِ جنسهِ وكذلك حركتِه، فإنَّه يُسمَّى غانغريا. وإنْ كان قدْ بَطلَ ذلك ممَّا له ذلك فإنَّه يُسمَّى سقافلس،[105] أي موتُ العضوِ عند المتأخِّرينَ،و أمَّا المتقدِّمُونَ فيسمُّونَ الأوَّلَ

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[103] "شرٌ" النص غير واضح، وقراءةً أخرى لهذه الكلمة هي: - The text is slightly unclear and the word can also be read as "*shar*"(evil, injury, harm).

[104] بسبب الورم – نتيجة الورم

[105] "اسم يوناني يقال عند الأطباء –حقيقةً– على فساد العضو وموته" (كتاب الماء الجزء الثاني، ص: 267). - According to *Kitāb al-Mā'*, *saqāfals* is a Greek word used to describe the "decay and death of an organ." I did not find this word in any of the other glossaries or dictionaries that I consulted, and have been unable to come up with suitable translation. See *Kitāb al-Mā'*, v. 2, 267.

[106] The phrase *qad batal dhalika minmā lahu dhalika* (has abolished that in whosoever has that) is extremely difficult to understand. It appears that the author is trying to say: when the decay of an organ or limb (in a person who has gangrene) reaches a point where it is no longer functional, then it is called *saqāfals*. In other words, gangrene and *saqāfals* refer to different stages of inflammatory decay.

gangrene and *saqāfals*, *saqāfals*.

والثاني: سقافلس.

Hippocrates said, "whosever is stricken with *saqāfals* in his brain, will die in three days, but if he survives [those three days], then he will recover." Galen said, "The Greeks used to call the disease that doctors call gangrene, *saqāfals*." This must be true, or else how would they (Greeks) have perceived that one could recover from *saqāfals* in his brain? If one can definitely not recover from *saqāfals* in any part other than the brain, then how [could you recover from *saqāfals*] in the brain?

قال أبقراط: منْ أصابَهُ في دماغِهِ سقافلس؛ فإنَّه يهلكُ في ثلاثةِ أيَّامٍ، فإنْ جاوزَهَا فإنَّه يبرأُ. وقالَ جالينوس: إنَّ أهلَ اليونانِ يسمُّونَ العلَّةَ التي يسمِّيهَا الأطباءُ غانغريا؛ سقافلس. فهوَ حَقٌّ، وإلاَّ كيفَ يُتَصَوَّرُ أنْ يبرءَ منْ عَرَضَ له سقافلس في دماغِهِ، فإنَّ هذا لا يمكنُ أنْ يبرأَ البتّةَ في غيرِ الدماغِ فكيفَ الدماغُ؟

A woman from the of circle al-Shaykh 'Uthmān al-Mālikī[108] in Egypt contracted this disease(*saqāfals)* in her leg, and she could move it and feel it. When I saw it, I informed [them] of the impossibility of recovery, and it was so.

قلتُ: وقدْ عَرَضَ لامرأةٍ من جماعةِ الشيخِ عثمان المالكي بمصرَ وكانَ قدْ حصلَ في ساقِهَا وكانتْ تحرِّكُهُ وتُحِسُّ به.[107] فلمَّا رأيتُهُ أخبرتُ بعدمِ البرءِ، وكانَ كذلك.

Smallpox and measles are from the diseases that have no cure, only if the patient is in a terrible state. As the author of al-*Mūjaz*, said, "If you find thirst getting stronger, the pain intensifying, the skin getting colder, and the small pox and measles have become green or black, then death is near."

ومن الأمراضِ التي لا برءَ لها الجدريُّ والحصبةُ إذا كان صاحبُهَا بحالٍ، كما قال صاحبُ الموجزِ:وإذا رأيتَ العطشَ يقوى والكربَ يشتدُّ والظاهرَ يبردُ والجدريَّ والحصبةَ يخضرّ أو يسودّ فالهلاكُ قريبٌ.

End stage leprosy [does not have a cure]. Ibn Zuhr said, "leprosy is rare to contract, except through close contact with lepers." He said, "If it is not in end stage, then its cure is possible." It is stated in *al-Mughnī*, "If the

والجذامُ المستحْكِمُ، قال ابن زهر: وقلّ ما يكونُ ذلك إلا عن مشافهةِ المجذومينَ. قال: وإنْ لم يستحكمْ فإنَّ علاجَهُ ممكنٌ. قالَ في

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[107] أعتقد ان الكاتب نسي ال"لا" وقصد أن يكتب:"كانتْ لا تحرِّكُهُ وتُحِسُّ به." -- I believe that the author meant that she could *not* move her leg or feel it, as that is the above description and definition of *saqāfals*. The scribe or author may have simply omitted the *Lā*.

[108] The person mentioned by our author is most likely 'Uthmān bin Alī bin Muḥammad bin Muḥammad al-Ghazzī al-Mālakī(d. 1009 A.H./1600 A.D.). He was born in Egypt and died there. He was scholar in Arabic. He produced many works. See Kaḥḥālah, op. cit., v. 6, 264.

patient's voice becomes harsh, his nose begins to flatten, his hair falls out, his body erupts, his [skin] reddens with intensity, his fingers fissure, and his limbs fall off, then there is no hope in treatment."

المغني: فإنْ عَرَضَتْ البَحُوحَةُ في الصوتِ وتفطّسَ الأنفُ وتساقطَ الشعرُ وتفجَّرَ البدنُ واشتدتْ حمرتُهُ وتشقَّقَتْ الأصابعُ وتساقطت الأعضاءُ فلا مطمعَ في العلاجِ.

Likewise is vitiligo (luekoderma). Ibn Zuhr said, "The one who scratches, but does not redden, or wounds himself but does not bleed, then his treatment is definitely impossible."

وكذلك البرصُ، قال ابن زهر: أي الذي إذا حكَّ لم يحمرّ وإنْ جُرِحَ لم يخرجْ منه دمٌ، فإنَّ علاجَهُ مُمْتَنِعٌ البتَّةَ.

Chronic scrofula [is impossible to cure] in Abyssinians and Blacks that are not in their home country, according to what I have witnessed.

والخنازيرُ المزمنةُ إذا كانتْ بالحبوشِ والزنجِ وكانوا بغيرِ إقليمهم فيما شاهدْتُهُ.

According to the majority of doctors, cancerous inflammation in any organ, whether it has ulcerated or not, is [impossible to cure], if it is in place where one is not able to cut it out because of numerous blood vessels around it or because of its proximity to a vital organ. Al-Samarqandī said, "In general it is a disease that has no hope of recovery."

والورمُ السرطانيُّ في أيِّ عضوٍ كانَ، متقرحاً كانَ أو لا،وعندَ أكثرِ الأطبَّاءِ إذا كان بمحلٍّ لا يمكنُ قطعُهُ، إمَّا لكثرةِ الشرايينِ أو لقربِهِ من عضوٍ رئيسٍ. قال السمرقندي: وهو بالجملةِ داءٌ لا مطمعَ في برئِهِ.

Warning: The diseases that you cannot cure and result in death include the bite of a dog, if the patient fears the pain. Likewise, is the acute fever; if on the patient's hands appears black inflammation with surrounding redness accompanied by severe pain, this disease will kill the patient in seven days.

تنبيهٌ: ومن الأمراضِ التي لا يُمكنُ برؤُها وتوجِبُ الحتْفَ، عضَّةُ الكلبِ إذا تخوّفَ من آلامِهِ صاحبُهَا. والحمَّى الحادةُ إذا ظهرَ على أصابعِ يديّ صاحبِها ورمٌ أسود حولَه حُمْرَةٌ مع وجعٍ شديدٍ، وهذا يهلكُ صاحبُهُ في السابعِ.

The acute fever [is also lethal], if the patient imagines that a black boy wants to kill him and death is near in this [disease]. [The acute fever] that is associated with complains of blindness, deafness, deficiency

وكذلك الحمَّى الحادة إذا تخيَّلَ صاحبُهَا أنَّ غلاماً أسودَ[109] يريدُ قتلَهُ، والموتُ مُطِلٌّ في هذا. أو اشتكى بالعمى والصمم ولم يحسْ بوجعٍ

[109] حسب نسخة المخطوط: "أسوداً". – In the original text: " *'Aswadān.*"

in pain sensation, and oedema of the face and limbs, before the 14th day [is also deadly]. Death is estimated to happen before [the 14th day] in such a case. The acute fever associated with sweat from the head and neck that is a cold sweat [will also result in death]. As will the acute fever that results in a severe drop in [the patient's] pulse, after the fever has passed.

This is the end of what we wanted to mention from the contagious diseases that have no cure, their harm and danger spreading to more than two people. [The diseases discussed] have a known name and described symptoms, without distinction as to whether the patient is able to survive or not.

Regarding the diseases [that I mentioned] that do not have a cure and in which the patient's fate is to pass away, I did not strive or intend to elaborate on them, because the ancients, may God the exalted have mercy on them, devoted numerous books to this purpose. They explained the signs of death and decay, taking into account the different methods and conditions. [I did nothing] beyond mentioning the name of the references, so that the seeker and those on the path of [knowledge] are drawn to search their books.

By God, I ask for the benefit which we want for all Muslims. [May God] accept my advice[my treatise], as sincere work for the sake of the Lord of the Worlds, on behalf of the Lord of Might, and the leader of universe, our leader Muḥammad, the beloved of the Lord of creation. May the peace and blessings

ولا ألمٍ وتهبج[110] الوجهُ والأطرافُ قبلَ الرابع عشر، وهذا يتوقعُ فيه الموتُ قبلَهُ. أو عرقَ فيها الرأسُ والرقبةُ †عرقاً† وكان العرقُ بارداً. أو صَغُرَ النبضُ للغايةِ بعدَ إقلاعِ الحمَّى.

وليكنْ هذا آخرَ ما أردناهُ من ذكرِ الأمراضِ التي لا يمكنُ برؤها والتي تعدوا ويتعدَّى إلى أكثرَ من اثنين خطرُهَا وضررُهَا، ممَّا له اسمٌ معروفٌ وعرضٌ موصوفٌ، سواءً كان يسلَمُ معه العليلُ أمْ لا.

وأمَّا ذكْرُ ما لا يسلَمُ معه العليلُ ويؤُولُ الأمرُ فيه إلى الرحيلِ فلَمْ أقصدْ لذكره لأنَّ المتقدمينَ رحمهم الله تعالى قد أفردوا لذلك كتباً عديدةً، وأودعوا فيها علامةَ الموتِ والانحلالِ، على اختلافِ الطرقِ والاحوالِ، مع قطعِ النظرِ عن ذكرِ اسمِ كلِّ موضعٍ يقعُ فيه ذلك لشدِّ فحصِ الناظر في كتبهم والسالك.

واللهَ أسألُ النفعَ بما أردناه لجميعِ المسلمينِ وأنْ يجعلَ نصحي خالصاً لوجه ربِّ العالمين بجاهِ ربِّ العزَّةِ وسيِّدِ الكائناتِ وحبيبِ ربِّ البريَّاتِ سيِّدِنا محمدٍ صلى الله عليه وسلم

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[110] - التهبج:" ورم بارد عن ريح ... و يقال أصبح فلان مهبجاً أي متورماً"(كتاب الماء الجزء الثالث، ص:449).

Tahabbuj is loosely defined as swelling, inflammation, or in humoral medicine a "cold swelling" (*Kitāb al-Mā'*, v. 3, 449). A more suitable medical translation of the word may be "oedema." See Abdul-Hameed, *Comprehensive Glossary of Avicenna*, 49.

of God be upon [him], and upon his family and his companions, who are distinguished by the perfection of their qualities and attributes. *'Āmīn* .

And God knows best, and God will reckon with us, and the Trustee will bless [us]. And may the peace and blessings of God be upon our lord Muḥammd, and on his family, and his companions, till judgement day. Praise due to God, the Lord of the Worlds.

وعلى آلهِ وأصحابِهِ المخصوصينَ بأكملِ النعوتِ والصفاتِ، آمين.

والله أعلم وحسبنا الله ونعمَ الوكيلُ.وصلَّى الله على سيدنا محمد وعلى آله وصحبه وسلَّم تسليماً كثيراً إلى يوم الدينِ والحمدُ لله ربِّ العالمين.

Glossary of Technical Terms

I have noted the sources of various technical words by noting an abbreviation and page number. The following are the abbreviations of the sources used in compiling this glossary. Words that have no sources can be found in a standard Arabic-English dictionary.

E = Kamal, Hassan, *Encyclopaedia of Islamic Medicine, with a Greco-Roman Back-ground* (Cairo: General Egyptian Book Organization, 1975).

HW = Wehr, Hans, *The Hans Wehr Dictionary of Modern Written Arabic, ed. J.M. Cowan* (Urbana, Il: Spoken Language Services, 1994).

Kitāb al-Mā' = Dhahabī, 'Abd Allāh ibn Muḥammad(d. 1064), *Kitāb al-Mā' : 'Awwal mu'jam ṭibbī lughawī fī al-tārīkh*, ḥaqqaqahu Hādī Ḥasan Ḥammūdī('Umān: Wizārat al-Turāth al-Qawmī wa-al-Thaqāfah, 1996).

Q = Fīrūzābādī, Muḥammad ibn Ya'qūb. *Al-Qāmūs al-Muḥīṭ*, ḥaqqaqhu Maktabat al-Turāth fī mū'ssasat al-risālat(Damascus: Maktabat al-Turāth fī mū'ssasat al-risālat, 1994).

Siddiqi = Siddiqi, Muhammad Zubayr, *Studies in Arabic and Persian Medical Literature(* India: Calcutta University, 1959).

Sina = Abdul-Hameed, H., H. Kabiruddin, H. Zahoori, M. Abdul-Aziz, and H. Fazlur-Rehman, *A comprehensive glossary of Avicenna's canon of Medicine*(New Delhi: Institute of History of Medicine and Medical Research, 1967).

T = Thābit ibn Qurrah al-Ḥarrānī(d. 901), *Kitāb al-dhakhīrah fī 'ilm al-ṭibb*, ed. G. Sobhy (Qāhirah : al Maṭba'ah al-Amīrīyah, 1928).

Glossary of Technical Terms

إبط : armpit.

ابتداء : The beginning of a disease, the onset(Siddiqi 147, Sina 2).

إبهام : Thumb(Sina 3).

أتبة : The curvature of the back or chest (Q, 31).

تصلّب يصيب عظام الظهر فيؤدي إلى انحنائه (القاموس المحيط ص 31).

اِخْتِلاج : Tremor, Trembling, Quivering(Sina 6).

اختلاط العقل : Mental confusion(Sina 6).

أدرة : Hydrocele, Scrotocele, Variocele (Sina 7). Serotal Hernia (Siddiqi 148).

أربيتا : Origin of the thighs(*Kitāb al-Mā'*, v. 1, 54).

والأربية: أصل الفخذ(كتاب الماء – الجزء الأول ص: 54).

استرخاء : Relaxation, paralysis, to go limp, palsy(Sina 11). "Generally used in the loose sense of relaxation, but in its strict sense denotes complete loss of the power of movement and sensibility (Siddiqqi 148)."

استسقاءُ الزقّي : Acities, Abdominal dropsy(Sina 12).

استفراغ : evacuation, vomiting(HW 829).

إسهال : Diarrhea.

أطرافُ : Extremities.

اعتدال : Equality, equity, equilibrium (Sina 16)

أفيون : Opium.

أمعاء : Intestines.

انتشار العين : Dilation of the pupils, mydriasis (Sina 24).

انتهاء : The height, peak of a disease(Siddiqi 147)

أنْثَيَيْن : Testicles (Sina 24).

أنخراط : String (Sina 25)

خرطت العضو المأووف: ختت عنه مدته وقشوره(كتاب الماء الجزء الثاني ص:16).

انخراق : Rupture(Sina 25).

انخزال : The word *'inkhizāl* from the root *khazal* means "to walk heavily," (*Al-Qāmūs al-Muḥīṭ*, 367) "to shorten," (HW, 275), and the noun *khuzla* means "to have his back broken," (*Al-Qāmūs al-Muḥīṭ*, 367). In this context then, it appears to suggest a displacement of the vertebrae.

أعصاب : Nerves.

أغشية : Membranes.

باقلى : Purslane (E 793).

باه : Sexual Power, Aphordisia (Sina 29).

بحوحة : To become hoarse, hoarseness (HW 53).

تغير في الصوت(كتاب الماء – الجزء الأول ص: 104).

التهبج: ورم بارد عن ريح ... و يقال أصبح فلان مهبجاً أي متورماً(كتاب الماء الجزء الثالث، ص:449).

تَهَلْهُل: To relax, to become loose(Sina 49).

ثِقَل اللسان: Heaviness of the tongue (Sina 50).

ثؤلول: Warts (Sina 49).

جدريّ: Small pox(Sina 51, Siddiqi 150).

جذام: Leprosy.

جرب: Itch, Scabies, pustules (Sina 52, HW 140). Dry Scab (Siddiqi 150).

جرب الكلية: Renal Pustules(Sina 52).

جرب العين: Granulation of the lids, trachoma (Sina 52), Celiary Blepharitis (Siddiqqi 151).

حدْبَة: Kyphosis (Sina 57).

حدر: To be thick, to bring down, to drop, to shed, to decline(HW, 191).

حصبة: Measles (Siddiqi 151).

حصوة, حصاة: Stones, Pebbles, Calculus.

حصف: Rash (E 848). A kind of skin eruption which causes itching of the body in the day(Siddiqi 151). Miliaria rubra, prickly heat (Sina 59).

حفر: Cavities.

حُقّ: Socket cavity, acetabulum(Sina 59).

حُمَّى (ج: حُمَّيات): Fever(sina 61).

حُمَّى حادة: Acute fever(Sina 61).

حمَّى الدق: Hectic fever(Sina 61),

حنطة: Wheat.

حواس: Senses (Sina 63).

برْسام: Diaphragmitis, Daraphrenitis, Pleurodynia (Sina 31). Pleurisy(HW 65).

هو ورم حارّ في الحجاب المعترض بين الكبد والمعدة يحصل معه الهذلن لأتّصال هذا الحجاب بحُجُب الدّماع"(كتاب الماء – الجزء الأول ص: 117).

بَرَص: Leukoderma(Sina 31). Vitiligo (E 844), tuberculoid-type leprosy, scleroderma, pellagra, ichthyosis(See M. Dols, "Leprosy in Medieval Arabic Medicine," *Journal of the history of Medicine and Allied Sciences* 36(1979): 317-320).

بلغم : Phlegm.

بول في الفراش: Bed-Wetting, Enuresis nocturnal (Sina 34).

بياض: Opacity of the Cornea(Sina 35).

تآكل الأسنان: Dental carries(Sina 35).

تُخْمَة: Dyspepsia(Sina 38), indigestion(Siddiqi 150).

تشنُّج: Convulsion, spasm (Sina 41, Siddiqi 150).

تفل: Spit, saliva. Ill-smelling(HW 115)

التفْلُ: البصاق والزبد(القاموس المحيط، ص:1254).

تَقْطِيْر البول : Strangury, straugury(Sina 44)

تمدُّد: Tension, distension, extension(Sina 46).

تهبج: Oedema(Sina 49)

رباطات : Ligaments.

ربو: Asthma

رحم: Uterus.

رعشة: Tremor, trembling(Sina 81).

ركبة: Knee.

رَمَد: Ophthalmia, conjunctivitis (Sina 82).

رياح الأفرشة: Spina ventosa(Sina 83)

زئبق: Mercury.

زَحِيْر: dysentery(HW 434, Sina 85). Tenesmus (E 852).

استطلاق البطن بشدة وتقطيع في البطن يمشّي دماً، وهو وجع تمددي وانجرادي في المعي المستقيم(كتاب الماء الجزء الثاني ص: 203 – 204).

زوال: Dislocation(Sina 86).

سبل: Pannus (Siddiqi 155), Vascular Keratitis(Sina 35), vascular opacity of the cornea(E 853).

سدرة: Dizziness(Sina 88, Siddiqi 155), Syncope (E 853).

سحج: Abrasion, intestinal abrasion (Sina 87).

السحج في الأمعاء: تقشُّرٌ في سطحها الباطن له. ثم اشتهر هذا حتى أطلق لفظ السحج على كل اسحاج في الأمعاء. كتاب الماء الجزء الثاني ص: 243

سقافلس: "Decay and death of an organ" (*Kitāb al-Mā'*, v. 2, 267).

"اسم يوناني يقال عند الأطباء –حقيقةً– على فساد العضو وموته"(كتاب الماء الجزء الثاني، ص: 267).

سِلّ : Consumption, Pthisis.

سكتة: Apoplexy (Sina 90, Siddiqi 155 E853),

شترة: Lagophthalmos, inversion of the eyelid(Sina 94), shrinking and aversion of

خَدَر: Anaesthesia, insensibility(Sina 64), numbness(HW 266).

خرخرة: Snorting (Sina 75)

خرز: Vertebra (Sina 75), ponum adami (siddiqi 153).

خروع: Ricimus Communis, Castor Oil Plant(E 803).

خفقان: Palpitation(Siddiqi 153), Tachycardia (Sina 66)

خنازير: Scrofula(Sina 67).

خنّاق: Diptheria, pheryngitis(Sina 68), croup(E 849), Al-Mūjūsī has differentiated between khunāq that is due to inflammation of the larynx and or that which is due to the inflammation of the muscles of the throat or gullet(Siddiqi 153).

داءُ الفيل : Elephantiasis(Siddiqi 153).

دُبَيلَة: Abscess(Sina 69).

درب: A disease that afflicts the stomach, weakening it to the point where it can no longer digest food. (*Kitab al-Ma'*, v. 2, 72).

الدرب: داء يصيب المعدة فلا تكاد تقوى على هضم الطعام. كتاب الماء الجزء الثاني، ص: 72.

دمْعة: Epiphora, weeping discharge(E 850).

دوالي: Varicies, varicose veins (Sina 75).

ذات الجنب: Pleurisy (Sina 76)

ذات الرئة: Pneumonia(Sina 76)

ذَكَر: Male penis (Sina 77)

the upper eye lid(E 853), trepion (Siddiqi 155).

شذر: Small peals

اللؤلؤ الصغار (القاموس المحيط ص 531)

شعير: Barley.

طبع: Feces(*Kitāb al Mā'*, v.2, 452).

يقال: طبيعة هذا ليّنة، أي: برازه. (كتاب الماء، الجزء الثاني ،ص:45).

صرَع: Epilepsy.

صلع: Boldness.

ضمور: Atrophy, Atrophia(Sina 105).

طحال: Spleen (Sina 106).

طرش: Deafness.

ظُفْرة: Pterygium(Siddiqi 156, Sina 108). Pterygium wing like membrane, Hieracium pilosella(E 855).

عانة: Pelvic region, pubis(Sina 108).

عِرْق (ج: عروق): Vessel, root (Sina 110).

عِرْقُ النسا: Sciatica(Sina 110).

عظام: Bones.

عُقْر: Sterile, barren (Sina 116).

عُقْم: Sterile, barren (Sina 116).

غانغريا: Gangrene(Sina 119).

غربة: Fistula Lachrymalis, Dacryosyrinx(Sina 121). Lachrymal abscess and fistula(E 857).

غشي: Syncope, Faint(Sina 122).

غطيط: Snore (Sina 122, HW 792).

غَوْر: To dip, to sink (Sina 124).

فالج: Paralysis(Sina 124)

فساد: Corruption, decay, decomposition(Sina 126).

فقار: Vertebrae(sina 127)

فقرة: Vertebrae(Sina 128).

فك: To dislocate, maxilla(Sina 128).

فُواق: Hiccough(Sina 128).

قروح: Ulcer, sore.

قَشْعَرِيْرَة: Cutis anserine, goose bumps, hair raising(Sina 132).

قضيب: Penis(Sina 133).

قعر: Bottom, fundus (Sina 133).

قفاء: The hind head, back part of the nape or head (Sina 133).

قلاع: Thrush, aphtha, aphhthae, stomatitis (Sina 134).

قلاع الاطفال: Infantile thrush, aphthae, lactantium, pediaphthia(Sina 134)

قَمَحْدَوَة: Occiput, external occipital eminence (Sina 135).

الرأس، وحسب كتاب الماء فهي ما أشرف على القفا من عظو الرأس(كتاب الماء، الجزء الثالث ص: 223).

قيء: Vomit, vomiting(Sina 139).

كبد: Liver.

كرب: Distress, affliction, grief(Sina 142).

كَرْمَة: Grape(Sina 142)

كزاز: Tetanus, lock jaw (Sina 142).

كلى: Kidneys, renal, pertaining to Kidney (Sina 144)

كمودة: Swarthy color, dark(HW 984)

تغير اللون وذهاب صفائه. كتاب الماء – الجزء الثالث ص: 177.

لَزِج: Viscid, viscous(Sina 148).

لقوة: facial paralysis (Sina 149)

ليف: Fibric, longitudinal, transverse, oblique fibers(Sina 150).

الماء في العين: Cataract(Sina 151, E 860).

ماليخوليا: Melancholia.

متقرِّح: Ulcerated, ulcerous (Sina 157).

محجر (ج: محاجِر): Eye socket (HW 185).

مثانة: Bladder.

مَدَّة: Pus(Sina 164).

مرارة: Gallbladder.

مرض حاد: Acute disease.

مستسقين: Ascitic, affected with ascities(Sina 168).

مشافهة: Proximity, "bringing one's lip near another's lips," See Fīrūzābādī, *Al-Qāmūs Al-Muḥīṭ*, 1611.

مغص: Gripes(spasmodic pain in the bowels), cramps (Sina 177).

مفاصل: Joints.

مقعدة: Anus(Sina 180).

منتن: Fetid, stinking (Sina 185).

منكب: Shoulder(Sina 188).

مني: Semen, sperm(Sina 188).

نبض: Pulse.

نخاع: Spinal cord(Sina 197)

نَسْج: Tissue, texture(Sina 198).

نفاخة: Bubble, blister(Sina 199).

نَفَث: Expectoration, sputum(Sina 200).

نَفَث الدم: Blood strained sputum(Sina 200).

نَفَث المدَة: Coughing of purulent matter(Sina 200).

نقرة: Pit, cavity, fossa, socket (Sina 201).

نقصع: Unable to find definition.

نيلوفر: European white water Lilly, nenuphar(HW 1190). Nilopher(E 8837).

وجنة: Cheek.

ودى: Secretions from the bulbourethral glands or Cowper's glands(Sina 207).

ورك: hip, hip joint(Sina 208).

ورم: Swelling, inflammation(Sina 208).

ورم السرطاني: Cancerous inflammation(Sina 208).

ورم قلب: Pericarditis (Sina 209).

يرقان: Jaundice (Sina 212).

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