

A POST-GHAZĀLIAN CRITIC OF AVICENNA: IBN GHAYLĀN AL-BALKHĪ ON THE MATERIA MEDICA OF THE CANON OF MEDICINE

AYMAN SHIHADDEH*
SOAS, University of London

Ibn Ghaylān al-Balkhī was first brought to attention recently when a work of his was presented as evidence of the spread of Avicennan philosophy, ‘the triumph of Avicennism’, during the sixth/twelfth century.¹ More recently, this figure has been further contextualized and shown to be of intrinsic interest as evidence and a main representative of a previously-unknown post-Ghazālian current that, despite the later obscurity of its exponents, played an immensely vital role in the development of the philosophical and theological traditions by paving the way for the definitive transformation initiated by Fakhr al-Dīn al-Rāzī later in the century.² Further light is shed on this current and its wider milieu in Ibn Ghaylān’s critical gloss on the Book of Simple Drugs in Avicenna’s *Canon of Medicine*, published and examined for the first time in the present article. This gloss, as will become clear below, must be one of the most unusual texts in the history of Islamic thought: it shows a philosophically and scientifically learned theologian, inspired by al-Ghazālī’s criticism of philosophy, veering away from the usual problems of metaphysics and natural philosophy and instead attacking Avicenna in the field of medicine, his ultimate goals being to demonstrate that Avicenna’s works are unreliable and should not be treated as though

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¹ Jean R. Michot, ‘La pandémie avicennienne au VI^e/XII^e siècle: Présentation, *editio princeps* et traduction de l’introduction du *Livre de l’advenue du monde (Kitāb ḥudūth al-‘ālam)* d’Ibn Ghaylān al-Balkhī’, *Arabica*, 40/3 (1993): 287–344.

² Ayman Shihadeh, ‘From al-Ghazālī to al-Rāzī: 6th/12th Century Developments in Muslim Philosophical Theology’, *Arabic Sciences and Philosophy*, 15/1 (2005): 141–79.

they were infallible, and to expose the prevalence, in the philosophical tradition, of uncritical imitation (*taqlīd*), as opposed to dispassionate intellectual enquiry. In what follows, I begin by offering a revised reading of the author's context, career and wider project, before examining the text at hand and its overall argument. An edition of the Arabic text with facing translation are provided at the end of the article.

I. THE POST-GHAZĀLIAN CONTEXT

The mainstream of early sixth/twelfth-century Ash'arism in the east of the Muslim world continued largely unaffected by the major developments initiated by al-Ghazālī (d. 505/1111) at the turn of the century.³ This mainstream current, the continuation of the classical tradition, is represented by al-Juwaynī's student Abū l-Qāsim al-Anṣārī (d. 512/1118), who following the death of his teacher became the most important Ash'arī in Iran, his student Ḍiyā' al-Dīn al-Makkī (d. ca. 559/1163–64),⁴ and the latter's son and student Fakhr al-Dīn al-Rāzī (d. 606/1210) in the earliest phase of his career. In contrast to al-Ghazālī, these theologians made relatively little effort to engage with the philosophical tradition, but continued to operate within the classical *kalām* theological tradition, arguing primarily with, and against, the Basran Mu'tazila.⁵

The early-to-mid sixth/twelfth century, as I argue in a previous study, also witnessed the emergence of a significant and distinct current, which can best be described as Ghazālīan.⁶ The two main representatives of this

³ For a sense of this continuation of the classical tradition, see: Ayman Shihadeh, 'Classical Ash'arī Anthropology: Body, Soul and Spirit', *The Muslim World*, 102/3–4 (2012): 433–77; id., 'Al-Rāzī's Earliest Kalām Work' in G. Schwarb and L. Muehlethaler (eds.), *Theological Rationalism in Medieval Islam: New Sources and Perspectives* (Leuven: Peeters, forthcoming).

⁴ I have recently identified a manuscript copy of the second volume of al-Makkī's major two-volume book, *Nihāyat al-marām fī dirāyat al-kalām*, a major mid twelfth-century *summa* of Ash'arī *kalām*. A facsimile edition of this manuscript, with an introduction to the author and text, has been published as: *Fakhr al-Dīn al-Rāzī's Father Ḍiyā' al-Dīn al-Makkī, Nihāyat al-Marām fī Dirāyat al-Kalām: Facsimile of the Autograph Manuscript of Vol. II*, with an introduction by Ayman Shihadeh (Berlin: Free University of Berlin; Tehran: Mīrāth-i Maktūb, 2013).

⁵ In the case of al-Rāzī, again, this is true only of the earliest phase of his career. See my forthcoming 'Al-Rāzī's Earliest Kalām Work'.

⁶ Shihadeh, 'From al-Ghazālī to al-Rāzī', 148 ff.

previously-unknown current, whom I have so far identified, are Sharaf al-Dīn al-Mas'ūdī and Ibn Ghaylān al-Balkhī, the subject of the present article. The Ghazālian current emerged as both a product of, and a reaction to, the great spread and appeal that Avicennan philosophy had achieved by the beginning of the sixth/twelfth century, even within non-philosophical orthodox circles. It was instigated chiefly by the manner in which al-Ghazālī approached philosophy in some of his works, but secondarily by the philosophy of Abū l-Barakāt al-Baghdādī (d. 560/1165), which presented an alternative to Avicennan philosophy, more harmonious in some respects with Sunni orthodoxy.⁷

Taking their cue mainly from al-Ghazālī, members of this movement engaged seriously, yet critically, in the study of philosophy and the sciences, especially through the works of Avicenna. Their outlook was shaped, first and foremost, not by his *al-Iqtisād fī l-ī' tiqād*, a *summa* of *uṣūl al-dīn*, but by the pointedly combative *Tahāfut al-falāsifa*, which he himself considers to represent the epitome of his *kalām* output.⁸ In contrast to their mainstream classical Ash'arī predecessors and contemporaries, their staple genre was, hence, not the general, traditionally-structured theological *summa*, but the critical commentary, or in other words the 'doubts' (*shukūk*) and the 'refutation' (*radd*) genres. Ibn Ghaylān and al-Mas'ūdī go even further than al-Ghazālī in that their known philosophico-theological writings exhibit no interest in either the positive exposition of theological doctrines or debate with the Mu'tazila, but are dedicated decidedly to the criticism of Avicenna's works and doctrines. They were effectively career critics of Avicenna.

That the writings of Ibn Ghaylān and al-Mas'ūdī are not independent of each other, but attest to the presence of a distinct *current*, or movement, in which they were the two central figures, is confirmed not only by the various similarities between their output, but furthermore by a variety of circumstantial evidence, not least the fact that they appear to have been colleagues and in direct contact with each other. Ibn Ghaylān, in one place, refers to al-Mas'ūdī as a major authority and cites a critical

⁷ On the significance of Abū l-Barakāt within this current, see my 'From al-Ghazālī to al-Rāzī', and Frank Griffel, 'Between al-Ghazālī and Abū l-Barakāt al-Baghdādī: The Dialectical Turn in the Philosophy of Iraq and Iran During the Sixth/Twelfth Century' in P. Adamson (ed.), *In the Age of Averroes: Arabic Philosophy in the Sixth/Twelfth Century* (London: The Warburg Institute, 2011), 45–75.

⁸ See, for instance, al-Ghazālī, *Jawāhir al-Qur'ān* (Cairo: Maṭba'at Kurdistān al-'Ilmiyya, 1329 AH [1911]), 25–6.

commentary he wrote on Avicenna's *al-Ishārāt wa-l-tanbīhāt*.⁹ Both figures, furthermore, were unfortunate enough to feature as the prime targets for the scathing criticism that Fakhr al-Dīn al-Rāzī, their junior by three or four decades, directed at some hapless contemporaries whom he met, and with whom he debated, during his travels in Transoxania.¹⁰

Though representing a current, these two figures nonetheless differed in their approaches to Avicennan philosophy. While Ibn Ghaylān was motivated, as he himself indicates, primarily by a desire to defend orthodoxy against the false doctrines advocated by Avicenna, al-Mas'ūdī combines that motive with a more philosophical and scientific outlook, which leads him often to criticize certain Avicennan doctrines and arguments on purely philosophical, rather than apologetic, grounds and to offer philosophical alternatives to them. It would not be uncharitable to describe both stances as immature, each in its own peculiar way: that of Ibn Ghaylān in its fixation on refutation, and that of al-Mas'ūdī in the relative ambiguity and incoherence of its objectives. While this interpretation might make these figures philosophically problematic, it nevertheless greatly heightens their historical consequence. For it highlights that they represent an intermediate transitional phase that is novel and innovative, but at the same time inchoate, unsettled and ultimately unsustainable. Ibn Ghaylān and al-Mas'ūdī do not quite mark the beginning of full-fledged neo-Ash'arism; they are not the first of the 'later' Ash'arīs, the *muta'akkkhirūn*, of Ibn Khaldūn.¹¹ Credit for the definition and initiation of this new, post-classical phase of Ash'arism, which supersedes the earlier classical phase, must be given to al-Rāzī in the last quarter of the sixth/twelfth century. Yet, as missing links, they certainly bear the hallmarks of being proto-neo-Ash'arīs, and as such they fill a serious gap in our understanding of the history of the school

⁹ Afḍal al-Dīn ibn Ghaylān al-Balkhī, *Ḥudūth al-ʿālam* (ed. Mahdi Mohaghegh; Tehran: Mu'assasa-i Muṭāla'āt-i Islāmī, 1377 SH [1998]), 111, 114. A critical edition and study of al-Mas'ūdī's *al-Shukūk wa-l-shubah 'alā kitāb al-Ishārāt* is forthcoming soon. Frank Griffel (*al-Ghazālī's Philosophical Theology* [Oxford and New York: Oxford University Press, 2009], 117) writes that Ibn Ghaylān was a student of al-Mas'ūdī. However, I have found no evidence to suggest that.

¹⁰ Al-Rāzī records these debates in his collection of controversies: *Munāzarāt jarat fī bilād mā warā' al-nahr* (hereafter, *Munāzarāt*), published in Fathallah Kholeif, *A Study on Fakhr al-Dīn al-Rāzī and his Controversies in Transoxiana* (Beirut: Dār al-Mashriq, 1966). On that, see Shihadeh, 'From al-Ghazālī to al-Rāzī', 157–62.

¹¹ 'Abd al-Raḥmān ibn Khaldūn, *al-Muqaddima* (ed. 'Abd al-Salām al-Shaddādī; Casablanca: Bayt al-Funūn wa-l-'Ulūm wa-l-Ādāb, 5 vols., 2005), iii. 34–6.

and of the interaction between the philosophical and theological traditions in the first three quarters of this century, and they contextualize other major developments that were taking place in the period.

II. IBN GHAYLĀN AL-BALKHĪ, GHAZĀLIAN CRITIC OF AVICENNA

Afḍal al-Dīn ‘Umar ibn ‘Alī ibn Ghaylān al-Balkhī, also known as al-Farīd al-Ghaylānī or occasionally al-Imām al-Farīd (the unique imām),¹² originates from Balkh in the north-east of Khurāsān. His birth and death dates are unknown. He tells us that he began his studies, including the study of mathematics, in his native Balkh before joining the Nizāmiyya school in Marw to study *fiqh* in Shawwāl 523 (September–October 1129).¹³ Having become interested in the study of logic at the Nizāmiyya, he then moved in Shawwāl 524 (September–October 1130) to Nishapur where he completed his studies in the subject. At some point, he appears to have studied with Muḥammad ibn Yūsuf al-Īlāqī (d. 536/1141), an Avicennan philosopher, logician and medical scholar.¹⁴ These dates suggest that he was born *ca.* 505/1111–12.

The next dateable point in Ibn Ghaylān’s life can be gleaned from a manuscript copy of a short and untitled gloss on a text by Muḥammad ibn ‘Abd al-Bāqī, more on which below. Dated, in the copyist’s colophon, Saturday 18 Jumādā II 576 (9 November 1180),¹⁵ and transcribed from the author’s original copy, this manuscript copy is introduced as follows: ‘Our venerated master Afḍal al-Dawla wa-l-Dīn, may God preserve his high status in honour and rank, says. . .’.¹⁶ The copy, thus, was made in

¹² Al-Rāzī, *Munāzarāt*, 59; id., *Muḥaṣṣal afkār al-mutaqaddimīn wa-l-muta’akbkhirīn mina l-ḥukamā’ wa-l-mutakallimīn* (ed. Hüseyin Atay; Cairo: Maktabat Dār al-Turāth, 1991), 228; Zāhīr al-Dīn ‘Alī ibn Zayd al-Bayhaqī, *Tatimmat Şiwān al-ḥikma* [published as *Tārikh ḥukamā’ al-Islām*] (ed. Muḥammad Kurd ‘Alī; Damascus: al-Majma’ al-‘Ilmī al-‘Arabī, 1946), 157; Muḥammad ‘Awfī, *Matn-i kāmīl-i Lubāb al-albāb* (ed. Edward G. Browne; London and Leiden: Luzac & Co. and Brill, 1903) ii. 167.

¹³ Ibn Ghaylān, *Hudūth al-‘ālam*, 10–11.

¹⁴ This is suggested in passages cited in: Muḥammad T. Dānishpazhūh, ‘*Gūsha’i az tārikh-i manṭiq dar Īrān: radd-i Ghaylānī bar-shakk-i Rasbīd Vatvāt dar qiyās-i khulf*’, *Nashriyya-yi dānishkada-yi adabiyāt-i Tabriz* 13 (1961): 289–310, at 292–3. On al-Īlāqī, see ‘Īlāqī, Sayyed Şaraf-al-Zamān’, *EI*.

¹⁵ MS Tehran, Kitābkhāna-yi Majlis-i Shūrā-yi Islāmī, 599 (6), fol. 174a. See n. 26 below.

¹⁶ *Ibid.*, fol. 171b.

Ibn Ghaylān's lifetime. This is despite the fact that the text continues as follows: "Umar ibn 'Alī ibn Ghaylān, may God encompass him in His forgiveness (*taghammada-hu Allāhu bi-l-ghufrān*), says...". Rather than being a requiescat, this supplication, which rhymes with the author's name, appears to have been included by the author himself.

Shortly after 582/1186,¹⁷ Ibn Ghaylān's younger contemporary Fakhr al-Dīn al-Rāzī met him as soon as the latter entered Samarqand in the course of his travels in Transoxania. Al-Rāzī writes that Ibn Ghaylān enjoyed a 'great reputation'; so he wasted no time and hurried to visit him at his home.¹⁸ It is unclear when al-Rāzī wrote his collection of controversies; this may have been many years after the event. By that time, Ibn Ghaylān had died, as al-Rāzī appends his name with the requiescat 'may God have mercy on him'.¹⁹ A very rough estimate of his date of death would be *ca.* 590/1194.

That the contemporaneous copyist of Ibn Ghaylān's gloss on Ibn 'Abd al-Bāqī's text refers to the author with a *dawla*-and-*dīn* title suggests that he may have been closely connected to the Qarakhānid rulers of Samarqand, assuming he was already based in that city in 576/1180. This appears to be confirmed in the only known, and indeed very short, biographical entry for Ibn Ghaylān, included by his contemporary Zāhīr al-Dīn al-Bayhaqī (d. 565/1170) in his *Tatimmat Šiwān al-ḥikma*, where he notes that 'he is the most excellent of the philosophers of the [court] circle' (*al-ḥaḍra*).²⁰

As mentioned already, Ibn Ghaylān's intellectual career concentrated largely on the criticism of Avicennan philosophy, the theme that underlies most of his known writings. He appears to have written at least two or three substantial works. In his only major work known to be

¹⁷ In the *Munāẓarāt* (32), al-Rāzī writes that while he was staying in Bukhārā, he met Sharaf al-Dīn al-Mas'ūdī and his colleague al-Raḍī al-Naysābūrī in 582/1186. Later in the text (*Munāẓarāt*, 54), he writes that he travelled from Bukhara to Samarqand, where he stayed for 'several years' (*sinīn*, though I wonder whether it might be 'two years', *sanatayn*) before returning to Bukhara and meeting with al-Naysābūrī again.

¹⁸ al-Rāzī, *Munāẓarāt*, 59. Al-Rāzī's goodwill, however, gave way to indignation as he was offended when the host kept his guests waiting before he came and greeted them. It is, of course, impossible to tell whether Ibn Ghaylān's perceived discourtesy was unintentional or meant to assert his senior scholarly status.

¹⁹ See also: Shihadeh, 'From al-Ghazālī to al-Rāzī', 151 n. 35; 162 n. 83.

²⁰ Zāhīr al-Dīn al-Bayhaqī, *Tatimmat Šiwān al-ḥikma*, 157; Max Meyerhof, 'Alī al-Bayhaqī's *Tatimmat Šiwān al-Ḥikma*: A Biographical Work on Learned Men of the Islam [*sic*]', *Osiris* 8 (1948): 122–217, at 193. On the Qarakhānids see 'Ilek-Khāns or Qarakhānids', *EI*².

extant, *Hudūth al-‘ālam* (*The Generation of the World in Time*, published 1998), he responds to a text titled *al-Ḥukūma fī ḥujaj al-muthbitīn li-l-māḍī mabda’an zamāniyyan*, in which Avicenna refutes the arguments put forth by those who maintain that the world is created in time and that the past, thus, has a temporal beginning.²¹ Ibn Ghaylān also informs us that he wrote a book titled *al-Tawḥī’a li-l-takḥī’a* (*Prolegomenon to the Refutation*), which concentrates on exposing the errors that Avicenna committed in the exposition of mixed syllogisms.²² On this he writes, ‘I exposed the errors of Avicenna in a field where no one would imagine he might err, namely logic, in numerous places therein’.²³ There appears to be an extant copy of this text.²⁴ In *Hudūth al-‘ālam*, he also announces his intention to write a refutation of Avicenna’s *al-Ishārāt wa-l-tanbīhāt*, the *Pointers and Reminders*, to be entitled *al-Tanbīh ‘alā tamwīhāt kitāb al-Tanbīhāt* (*Drawing Attention to the Casuistry of the [Pointers and] Reminders*), though it is unclear whether or not he did write it.²⁵

In addition to these two or three longer works, he is known to have written three shorter epistles, each surviving in one or two manuscript copies. One is the text discussed, edited and translated below, in which he concentrates his criticism on certain aspects of the materia medica of Avicenna’s *Canon of Medicine* and of a work of Ibn Ghaylān’s senior contemporary Ismā‘īl al-Jurjānī, more on whom below. Though the extant copy of this text is untitled, I will henceforth refer to it with the following title, which I have lifted out of the author’s introduction: *Drawing Attention to the Inconsistency, Discrepancy and Contradiction in the Book of Simple Drugs in Avicenna’s Canon of Medicine (al-Tanbīh ‘alā l-ikhtilāf wa-l-tafāwut wa-l-tanāquḍ fī kitāb al-adwiya al-mufrada min kitāb al-Qānūn fī l-ṭibb li-Ibn Sīnā)*. The two other texts are not directed at Avicenna, but nonetheless share the same critical stance seen in all of Ibn Ghaylān’s other known works. They both deal with subjects closely associated with philosophy, and target senior contemporaries.

²¹ An edition of Avicenna’s short text is published as an appendix to Ibn Ghaylān’s *Hudūth al-‘ālam*, 131–52. See n. 9 above.

²² Ibn Ghaylān refers to the *Tawḥī’a* in both the *Tanbīh ‘alā l-ikhtilāf* (p. 160 below) and *Hudūth al-‘ālam*, 11.

²³ Ibn Ghaylān, *Hudūth al-‘ālam*, 11.

²⁴ The first text in MS Tehran, Kitābkhāna-yi Majlis-i Shūrā-yi Islāmī, 599, according to the Library’s catalogue, is an untitled and anonymous text on logic (Yūsuf I’tisāmī, *Fibrīst-i Kitābkhāna-yi Majlis-i Shūrā-yi Millī*, Vol. 2 [Tehran: Majlis-i Shūrā-yi Millī, 1933], ii. 356). However, Dānishpazhūh identifies it as a copy of the *Tawḥī’a* (*‘Gūsha’i az tārikh-i mantīq’*, 291–2). I have not yet had access to this copy.

²⁵ Ibn Ghaylān, *Hudūth al-‘ālam*, 11, 128.

The first is the aforementioned gloss on a commentary written by Abū Bakr Muḥammad ibn ‘Abd al-Bāqī (d. Baghdad, 535/1141), known as Qāḍī Mārīstān Baghdād or more commonly Qāḍī al-Mārīstān, on Book 10 of Euclid’s *Elements*.²⁶ This text remains unpublished. The second is a response to a short tract written by Rashīd al-Dīn Waṭwāt (b. Balkh, ca. 480/1087, d. Khwārazm, 578/1182) on a logical problem raised by al-Īlāqī, and it provides further evidence of Ibn Ghaylān’s interest in logic.²⁷ The two appear to have associated, and Ibn Ghaylān refers to a discussion in which he and Waṭwāt engaged in ‘the presence of some common people (*awāmm*)’, and in which the latter challenged him on the logical points in question.²⁸

Ibn Ghaylān amply and enthusiastically explains how and why he came to write all these works in criticism of Avicenna and representatives of the Avicennan tradition. He tells us that his early study of mathematical subjects and logic (subjects that, following al-Ghazālī, he continued to view favourably) led him gradually to the study of the closely-related subjects of philosophical physics and metaphysics, during which his ‘heart would feel perturbed’ because of ‘the conflict with the theological foundations of religion’, which he encountered in these subjects.²⁹ He thus turned to the study of *kalām* with a view to gaining the ability to refute the philosophers’ heterodox doctrines. This refutation he later prosecutes in his writings. Such a task was all the more urgent considering, as Ibn Ghaylān informs us in *Hudūth al-‘ālam*, the great spread of Avicennism among his contemporaries, including mainstream religious scholars—something at which he expresses

²⁶ MS Tehran, Kitābkhāna-yi Majlis-i Shūrā-yi Islāmī, 599 (6), fols. 171b–174a; I’tisāmī, *Fihrist-i Kitābkhāna-yi Majlis*, 357. On Qāḍī al-Mārīstān, see Heinrich Schützinger, ‘Der Qāḍī l-Mārīstān’, *Die Welt des Islam* 18 (1977): 101–15 (where an extensive list of biographical references is provided in n. 1, 101). On Qāḍī al-Mārīstān’s text, see Hubertus Busard, ‘A Latin Translation of an Arabic Commentary on Book X of Euclid’s *Elements*’, *Mediaeval Studies*, 59 (1997): 19–110.

²⁷ MS Tehran, Kitābkhāna-yi Majlis-i Shūrā-yi Islāmī, 599 (8); I’tisāmī, *Fihrist-i Kitābkhāna-yi Majlis*, 357. An edition has been published by Dānishpazhūh (*‘Gūsha’i az tārikh-i mantiq’*, 294–310). The text is the first part of a collection of epistles entitled *‘Uyūn al-rasā’il min funūn al-masā’il*, the rest of which has not survived. On Waṭwāt, better known for his literary and philological work in Persian and Arabic, see ‘Rashīd al-Dīn Muḥammad b. Muḥammad b. ‘Abd Djalīl al-‘Umarī, known as Waṭwāt’, *El*²; ‘Waṭwāt, Rašid-al-Din’, *Elr*.

²⁸ Cited in Dānishpazhūh, *‘Gūsha’i az tārikh-i mantiq’*, 293.

²⁹ Ibn Ghaylān, *Hudūth al-‘ālam*, 10.

alarm.³⁰ ‘It has become rooted in the hearts of some’, he writes, ‘that truth is what [Avicenna] says, whatever that may be, that it is inconceivable for him to err, and that one who contradicts him in anything he says must be irrational’.³¹ The same point is reiterated in his gloss on the *materia medica* of the *Canon*, where he refers to ‘those who believe that he is immune from error and cannot conceivably go wrong’.³²

In one place in *Hudūth al-‘ālam*, Ibn Ghaylān confirms his motive for writing purely refutative works to the exclusion of general and comprehensive theological *summae*, as other defenders of Sunni theology were in the habit of doing, and by this underscores his break with the objectives and *modus operandi* of classical *kalām*. He writes that earlier *kalām* theologians premised the doctrine that the world is created *ex nihilo*, which is the subject of his own book and one of the most fundamental doctrines in Islamic theology, on four principles: first, that accidents exist; second, that accidents are generated in time; third, that there must be at least some accidents inhering in each body (so bodies³³ cannot pre-exist accidents); and, fourth, that what cannot pre-exist that which is generated in time must itself be generated (so both bodies and accidents, which make up the entirety of the world, are generated in time).³⁴ Ibn Ghaylān goes on to argue that none of these principles (formulated in such broad terms, rather than in the terms of *kalām* atomism) are contested by the philosophers: They too affirm that the world consists of bodies, that no body is devoid of accidents, that accidents are generated in time, and that what pre-exists what is generated in time must itself be generated. Notwithstanding their acceptance of these principles, they maintain that the world is pre-eternal and that these principles do not prove it to be generated.

³⁰ On this see Michot, ‘La pandémie avicennienne’; Shihadeh, ‘From al-Ghazālī to al-Rāzī’, 148–51.

³¹ Ibn Ghaylān, *Hudūth al-‘ālam*, 13.

³² Ibn Ghaylān, *Tanbīh ‘alā l-ikhtilāf*, p. 173 below.

³³ By ‘bodies’, *kalām* theologians here refer to atoms. Ibn Ghaylān, however, does not mention atoms in his account of the argument.

³⁴ See, for instance, al-Juwaynī, *al-Shāmīl fī uṣūl al-dīn* (ed. ‘Alī S. al-Nashshār *et al.*; Alexandria: Munsha’at al-Ma‘ārif, 1969), 166 ff. On the argument from accidents for creation *ex nihilo*, the main argument for the existence of God in classical *kalām*, see Herbert Davidson, *Proofs for Eternity, Creation and the Existence of God in Medieval Islamic and Jewish Philosophy* (New York and Oxford: Oxford University Press, 1987). For a brief outline, see: Ayman Shihadeh, ‘The Existence of God’, in T. Winter (ed.), *The Cambridge Companion to Classical Islamic Theology* (Cambridge: Cambridge University Press, 2008), 197–217, at 205–8.

For although a particular accident inhering in a given body is generated, the body could have had a beginningless series of the same type of accident, in which case it could conceivably be pre-eternal.³⁵ To this, Ibn Ghaylān points out, the *kalām* theologians respond by advancing various arguments to demonstrate that a chain of generated events that has no beginning (*ḥawādith lā awwala la-hā*) is inconceivable.³⁶

This last response, according to Ibn Ghaylān, is pertinent since it defends the orthodox doctrine of creation *ex nihilo*, not against some hypothetical or obsolete objections thought up by the theologians (as is often the case in *kalām*), but against a real and contemporary challenge: that presented by the philosophers, who were gaining widespread popularity. By contrast, the long proofs traditionally put forth in support of the four principles themselves are much less pertinent and worthwhile:

The scholars had sought to prove the generation of the world in time against everyone, not only the philosophers. So they needed to prove the four principles against those who denied any of them. *Nowadays*, however, there is *no need* to prove these principles, since nowadays we have no opponents other than the philosophers, and since they have been a source of corruption in the world, and since they deny none [of the foregoing four principles]. I have, therefore, directed my attention, in this topic, to arguing with them using what they cannot deny and have no means to evade and to reject.³⁷

He does not, however, consider it necessary to refute all the philosophers. For Avicenna, he writes, had refuted (*abtāla*) Aristotle and become the supremely authoritative and influential philosopher among those Muslims interested in philosophy. This makes it pointless and superfluous—a pedantic waste of time—to discuss the doctrines of any philosophers other than Avicenna, and imperative to focus all one's efforts on refuting his philosophy, which is spreading corruption (*fasād*) among Ibn Ghaylān's contemporaries.³⁸ In this view, Ibn Ghaylān accentuates, and puts a new spin on, a point made previously by al-Ghazālī to introduce his criticism of the philosophical tradition.³⁹

³⁵ Ibn Ghaylān, *Hudūth al-ʿālam*, 15. A similar criticism is put forth by Averroes (d. 595/1198) against the argument from accidents: *al-Kashf ʿan manābij al-adilla fī ʿaqāʾid al-milla* (ed. M. ʿA. al-Jābirī; Beirut: Markaz Dirāsāt al-Wahda al-ʿArabiyya, 1998), 103 ff.

³⁶ See, for instance, al-Juwaynī, *al-Shāmīl*, 215 ff.

³⁷ Ibn Ghaylān, *Hudūth al-ʿālam*, 16.

³⁸ *Ibid.*, 15.

³⁹ Al-Ghazālī, *Tahāfut al-falāsifa* [*Algazel, Tahafot al-falasifat*] (ed. Maurice Bouyges; Beirut: Imprimerie Catholique, 1927), 8–9; *id.*, *al-Munqidh minā l-ḍalāl wa-l-mūṣil ilā dhī l-ʿizza wa-l-jalāl* [*al-Munqidh min aḍalāl*] (ed. Farid

Al-Ghazālī distinguishes three ‘types’ of philosophers: the Physicalists (*dabriyya*), ancients who denied the existence of the Creator and maintained that the world is pre-eternal and self-sustaining; the Naturalists (*tabīʿiyyūn*), who affirmed the existence of the Creator, but advocated a physicalist account of human nature; and the Metaphysicians (*ilāhiyyūn*), a ‘later’ group of philosophers, including Socrates, Plato and most importantly Aristotle, who, we are told, refuted the views of the previous two groups and developed a comparatively mature and refined set of teachings.⁴⁰ Aristotle’s philosophy was then adopted and transmitted by al-Fārābī and Avicenna. Though al-Ghazālī considers all three groups to be unbelievers, the last clearly deserve this verdict on fewer counts. They are also the only group of philosophers whose views deserve and need to be addressed, as the first two, according to him, are extinct and had already been dealt with by the third. However, by presenting Aristotelianism as the least-bad school of philosophy and effectively redirecting much of the earlier sweeping anti-philosophical sentiment towards the two extinct groups, al-Ghazālī actually paves the way for his view that Aristotelianism has much good to offer theology. Ibn Ghaylān’s sketch of the history of philosophy contrasts with al-Ghazālī’s in two key respects: It unambiguously identifies Avicenna and his followers (*shīʿatu-hu*) only as opponents (*khaṣm*), whose views pose an imminent threat to Islam and who need to be refuted with the utmost urgency; and it argues, more explicitly than al-Ghazālī does, that Avicennan philosophy is the only school of thought that ought to be engaged and refuted.

Having read *Hudūth al-ʿālam*, al-Rāzī chooses to attack Ibn Ghaylān on this very point when he meets him in Samarqand and engages him in a debate around the dialectical tactics and line of argument implemented in this book. Ibn Ghaylān defiantly reiterates his position, declaring that his sole objective is to argue against Avicenna, and hence to assert the generation of the world in time by rebutting the latter’s notion of a chain of generated events that has no beginning. ‘I dispute this problem with none other than Abū ʿAlī [Avicenna]’, he reportedly tells al-Rāzī,

Jabre; Beirut: Commission libanaise pour la traduction des chefs d’oeuvres, 2nd edn., al-Lajna al-Lubnāniyya li-Tarjamat al-Rawāʿi, 1969), 19–20.

⁴⁰ The names of the last two groups correspond to the components of philosophy that al-Ghazālī discusses immediately afterwards, namely natural philosophy (*tabīʿiyyāt*) and metaphysics (*ilāhiyyāt*) (*Munqidh*, 23). I suspect, however, that al-Ghazālī uses the latter group name with the secondary sense of ‘Theists’, not to suggest their being the only ones to recognize the existence of God, but to emphasize that they afford God a greater role and advocate certain views that are more harmonious with the teachings of theistic religions.

‘So since I have refuted his doctrine of a beginningless chain of motion-events [hence, a beginningless series of accidents], this has sufficed to prove the temporal generation of bodies.’ And, a little later, ‘I have not undertaken to prove the temporal generation of bodies [e.g. by establishing the aforementioned four principles]; rather, I have only undertaken to refute the opinion of Abū ‘Alī.’⁴¹ For this, Ibn Ghaylān was taken to task, quite robustly, by al-Rāzī, who accused him of engaging, not in proper scholarly enquiry (*baḥṭh*), but in mere disputation (*mujādala*) with a particular person on a particular opinion.⁴² Following this encounter, al-Rāzī appears to go on to write some sort of response to Ibn Ghaylān, to which two early biographers, al-Qiftī (d. 646/1248) and Ibn al-Sha‘ār al-Mawṣilī (d. 654/1256), refer with the title *Response to [al-Farīd] al-Ghaylānī (Jawāb al-Ghaylānī)*.⁴³ No copies of this text are known to be extant.

By taking such a tactical, refutative stance, Ibn Ghaylān has embodied the Ghazālian *kalām* ethos, as opposed to the style of theology practised by classical Ash‘arīs. Yet in this respect, he is arguably more Ghazālian than al-Ghazālī himself. Like al-Ghazālī, he views the central function of *kalām*, epitomized in both *Tahāfut al-falāsifa* and *Hudūth al-‘ālam*, as essentially defensive, refutative and therapeutic. The *mutakallim* should respond to heresies that form an immediate threat to the beliefs of the Muslim community and give rise to doubts in the hearts of the believers. The practice of *kalām*, hence, is a collective obligation (*farḍ kifāya*), rather than an individual obligation (*farḍ ‘ayn*).⁴⁴ Following al-Ghazālī, Ibn Ghaylān also considers the uncritical imitation (*taqlīd*) of the chief philosophers to be the greatest danger that threatens the orthodoxy of Islam, and hence deserving of the utmost attention of the *mutakallim*.⁴⁵

⁴¹ al-Rāzī, *Munāzarāt*, 60.

⁴² Ibid, 61; Shihadeh, ‘From al-Ghazālī to al-Rāzī’, 160–1.

⁴³ Jamāl al-Dīn ‘Alī al-Qiftī, *Tārīkh al-ḥukamā’* (ed. Julius Lippert; Leipzig: Dieterich’sche Verlagsbuchhandlung, 1903), 293; al-Mubārak ibn Aḥmad ibn al-Sha‘ār al-Mawṣilī, *Qalā‘id al-jumān fī farā‘id shu‘arā’ hādihā al-zamān*, (facsimile of MS Istanbul, Süleymaniye Library, Esad Efendi, 2327; Frankfurt: Institute for the History of Arabic–Islamic Sciences, 9 vols., 1990), vi. 110.

⁴⁴ Ibn Ghaylān, *Hudūth al-‘ālam*, 14. Cf. al-Ghazālī, *al-Iqtisād fī l-‘ī tiqād* (ed. İbrahim A. Çubukçu and Hüseyin Atay; Ankara: Nur Matbaası, 1962), 13–15; id., *Munqidh*, 16; Shihadeh, ‘From al-Ghazālī to al-Rāzī’, 142–4. On classical, pre-Ghazālian Ash‘arī positions on the obligatory nature of theological enquiry, see Richard M. Frank, ‘Knowledge and *Taqlīd*: The Foundations of Religious Belief in Classical Ash‘arism’, *Journal of the American Oriental Society*, 109 (1989): 37–62.

⁴⁵ al-Ghazālī, *Tahāfut al-falāsifa*, 4–7. Cf. Frank Griffel, ‘*Taqlīd* of the Philosophers: al-Ghazālī’s Initial Accusation in His *Tahāfut*’, in S. Günter (ed.),

Al-Ghazālī too writes of those who treat the main authorities of the philosophical tradition as being effectively immune from error.⁴⁶ Yet Ibn Ghaylān takes a more strident stance towards the philosophers than that of al-Ghazālī, who, we are told, should not have conceded the philosophers' belief in God and the hereafter.⁴⁷

The text published in the present article, the second anti-Avicennan text by Ibn Ghaylān to be unearthed, sheds new light both on his intellectual activity and on the post-Avicennan and post-Ghazālian milieu. It confirms the Ghazālian undercurrent, but furthermore shows that it was taken to an unprecedented extreme. For though the subject matter of this curious text is pharmacological, a most peculiar choice for a theologian, the author's ultimate objective, as he tells us in the preface and the concluding remarks, is not pharmacological at all, but rather theological.

III. IBN GHAYLĀN ON THE MATERIA MEDICA OF THE CANON

Ibn Ghaylān informs us, in the preface to the *Tanbīh*, of the immediate objectives of this short text. He writes:

I have gone through the Book of Simple Drugs in the *Canon of Medicine* by Abū 'Alī ibn Sīnā, and have found enough inconsistency (*ikhtilāf*), discrepancy (*tafāwut*) and contradiction (*tanāquḍ*) therein to indicate that the bulk of its contents are compiled from different earlier books with neither deliberation in the compilation process nor careful investigation. So it is my desire here to bring this to the attention of my fellow scholars, thus saving them the effort of research and the trouble of enquiry. Of the totality of [the errors that I identified,] it will suffice here to record those that pertain to the natures of drugs. For, except in a minority of cases, whenever a drug has two names starting with two different letters, and is thus listed under two alphabetical headings, he will give its nature in one place differently from what he gives in the other place. Similarly, the natures he assigns to many of the drugs he lists in his book titled *Heart Remedies* (*al-Adwiya al-qalbiyya*) are different from those found in the *Canon*.⁴⁸

Ideas, Images and Methods of Portrayal: Insights into Classical Arabic Literature and Islam (Leiden and Boston: Brill, 2005), 273–96.

⁴⁶ al-Ghazālī, *Tabāfut al-falāsifa*, 13.

⁴⁷ Ibn Ghaylān, *Hudūth al-'ālam*, 9.

⁴⁸ Ibn Ghaylān, *Tanbīh 'alā l-ikhtilāf*, p. 160 below.

A little further on Ibn Ghaylān informs us that he cites Avicenna's statements verbatim (though in fact some are paraphrased), his sole intention being to highlight the discrepancies and contradictions among the drug natures (*ṭabā'ī*, sing. *ṭab'*) he provides. By showing that it contains much inconsistency, and is thus an uncritical compilation from multiple earlier sources, Ibn Ghaylān seeks, in the first instance, to undermine the integrity of all that Avicenna had written on simple drugs. Though he hopes that it would be possible for him in the future to distinguish between the true and the false among these drug natures, he displays hardly any genuine interest in serving such a positive objective in this text. Here again, al-Rāzī's aforementioned accusation that Ibn Ghaylān was engaged in mere disputation, rather than proper scholarly enquiry, comes to mind.

In the preface, Ibn Ghaylān also expresses his astonishment at the way in which his senior contemporary al-Sayyid Ismā'īl al-Jurjānī (b. 434/1042, d. Marw, 531/1136) incorporated much material from the Book of Simple Drugs in the *Canon* into his own work titled *Dhakhīra-yi Khwārazmshāhī* (*The Khwārazmshāhī Treasure*), the most important medical encyclopaedia in Persian.⁴⁹ Ibn Ghaylān cites the Arabic translation, *Tarjamat al-Dhakhīra al-Khwārazmshāhiyya*, which al-Jurjānī himself prepared. He writes that despite the fact that al-Jurjānī spent his 'long life' studying, writing and compiling medical books (he lived for approximately 100 years and began writing his *Dhakhīra* around the age of 70), he omits to identify and to correct Avicenna's errors, but simply reproduces the same discrepancies and contradictions found in the *Canon*. Ibn Ghaylān observes that although it is highly unlikely that al-Jurjānī failed to notice and identify these errors in Avicenna's works, he nevertheless chooses to follow him uncritically, even when doing so leads him in some cases to committing additional errors.⁵⁰ With the reverential awe that he displays towards his eminent predecessor, al-Jurjānī thus represents those scholars who follow Avicenna blindly as though he were infallible: a trend to which Ibn

⁴⁹ On Ismā'īl al-Jurjānī and his book, see Zāhīr al-Dīn al-Bayhaqī, *Tatimmat Šiwān al-ḥikma*, 172–4; 'Jurjānī, Zayn al-Dīn Esmā'īl', *Elr*; 'Daḳīra-ye K̄wārazmshāhī', *Elr*; B. Thierry de Crussol des Epesse, *Discours sur l'oeil d'Esmā'īl Gorgānī* (Tehran: Institut Français de Recherche en Iran, 1998), 7–13; Nancy Gallagher, *Arabic Medical Manuscripts at the University of California, Los Angeles* (Malibu, CA: Undena Publications, 1983), 2 ff.; Manfred Ullmann, *Die Medizin im Islam* (Leiden: E.J. Brill, 1970), 161. A facsimile edition of a manuscript copy located in Tehran was published by 'Alī-Akbar S. Sīrjānī (Tehran: Intishārāt-i Bunyād-i Farhang-i Irān, 1976).

⁵⁰ Ibn Ghaylān, *Tanbīh 'alā l-ikhtilāf*, pp. 160, 161, 171 below.

Ghaylān refers in his concluding remarks and which, as mentioned, he subjects to severe criticism in his *Hudūth al-‘ālam*, exhibiting a markedly Ghazālian influence. From Ibn Ghaylān’s citations, however, one gets the impression that, to him, al-Jurjānī was one of ‘us’, the orthodox, who were led astray by Avicennan philosophy, rather than an Avicennan philosopher straight and simple. Indeed, we know that in Nishapur he studied with the physician ‘Abd al-Raḥmān ibn Abī Ṣādiq (d. shortly after 460/1068),⁵¹ but also associated with the leading Ash‘arī and Sufī Abū l-Qāsim al-Qushayrī (d. 465/1072).⁵² The significance of al-Jurjānī here, moreover, does not stem purely from both his great eminence as a physician and his alleged uncritical imitation of Avicenna, but also, it seems, from his possible association with the Ghazālian current. The evidence suggestive of this is that Zahīr al-Dīn al-Bayhaqī attributes to him ‘a book in response to the philosophers’ (*kitāb fī l-radd ‘alā l-falāsifa*), which resonates with the type of activity with which Ibn Ghaylān was engaged.⁵³ If al-Jurjānī was indeed an earlier Ghazālian critic of Avicennan philosophy, this would be all the more reason for Ibn Ghaylān to point out his blind imitation of Avicenna so reprovingly.

Ibn Ghaylān’s dialectical terms of reference in the *Tanbih* are mostly Ghazālian: first and foremost, the criticism of Avicenna to show that he is not infallible and therefore should not be imitated uncritically. Even the focus on the contradictions (*tanāquḍ*) committed by Avicenna betrays a direct Ghazālian influence.⁵⁴ Ibn Ghaylān’s non-Ghazālian (and arguably un-Ghazālian) innovation here is that he chooses a new, non-philosophical battlefield in order to undermine, indirectly, the integrity of Avicenna’s philosophical thought. He considers this a legitimate line of criticism, as it serves the goal of underscoring the philosopher’s contradictions and blind plagiarism and imitation of his predecessors.

Ibn Ghaylān concentrates his criticism on one aspect of Avicenna’s pharmacology, that is, the natures that he attributes to the different

⁵¹ Though Ibn Abī Ṣādiq was influenced by Avicenna’s medical works, it is unlikely that he studied with him, as reported in later biographical sources. On him, see ‘Ebn Abī Ṣādeq’, *Eir*; Ullmann, *Medizin*, 160.

⁵² ‘Abd al-Karīm ibn Muḥammad al-Sam‘ānī, *al-Muntakhab min mu‘jam shuyūkh al-Imām al-Ḥāfiẓ Abī Sa‘d ‘Abd al-Karīm ibn Muḥammad ibn Manṣūr al-Sam‘ānī al-Tamīmī* (ed. Muwaffaq ibn ‘Abd Allāh ‘Abd al-Qādir; Riyadh: Dār ‘Ālam al-Kutub and Jāmi‘at al-Imām Muḥammad ibn Sa‘ūd, 1996), i. 386 (no. 131).

⁵³ Zahīr al-Dīn al-Bayhaqī, *Tatimmat Ṣiwān al-ḥikma*, 172.

⁵⁴ Al-Ghazālī, for instance, refers to the philosophers’ contradiction (*tanāquḍ*) in no less than five places in the introduction of *Tahāfut al-falāsifa* (6, 8, 13, 18, 20). One place is cited explicitly in Ibn Ghaylān’s *Hudūth al-‘ālam* (8).

simple drugs listed in the *Canon*. Following the preceding medical tradition, ultimately drawing on Galen's theory of the medicinal properties of drugs in his treatise *On Simple Drugs*, Avicenna itemizes simple substances, approximately 800 in total, alphabetically and gives each a pair of primary qualities (dry or moist, and warm or cool), and a degree of strength, increasing on a scale of one to four, for each quality.⁵⁵ The qualities assigned to each drug are not intrinsic to the drug itself, but delineate only the drug's actions, i.e. the effects that these remedies are said to have on the temperament of human bodies.⁵⁶ A drug can thus have either a drying or a moistening effect, and either a warming or a cooling effect. Inventories of simple drugs, therefore, are vital for determining which remedies to prescribe in order to restore the natural balance of the temperament of a particular human body, or of some organs thereof. A moistening drug, for instance, can be indicated to treat an ailment that involves excessive unnatural dryness in the body. Knowing the qualities of simple drugs is also vital for preparing more complex compound drugs, something to which we shall return further below.

To show that the natures that Avicenna attributes to the simple drugs he lists contain much inconsistency, Ibn Ghaylān simply enumerates various cases of discrepancy and contradiction between the natures assigned to those drugs that happen to be known by two names and that consequently came to be catalogued in two places in the Book of Simple Drugs in the *Canon*. Some substances come to be catalogued in multiple entries if they are known by different names in different regions, languages or earlier pharmacological sources, or if a substance has a dedicated entry but is also mentioned elsewhere as a product of another substance (e.g. the fruit or resin of a certain tree).⁵⁷ A discrepancy

⁵⁵ On Galen's treatise on simple drugs, see: Caroline Petit, 'La tradition manuscrite du traité des *Simplex* de Galien. *Editio princeps* et traduction annotée des chapitres 1 à 3 du livre I', in V. Boudon-Millot et al. (eds.), *Storia della tradizione e edizione dei medici greci: atti del VI Colloquio internazionale, Paris, 12–14 aprile 2008* [*Histoire de la tradition et édition des médecins grecs*] (Napoli: M. D'Auria, 2010), 143–65. For a brief overview of Galen's therapeutics, see: Helena M. Paavilainen, *Medieval Pharmacotherapy, Continuity and Change: Case Studies from Ibn Sīnā and Some of His Late Medieval Commentators* (Leiden and Boston: Brill, 2009), 48 ff. For a brief discussion of the transmission of lists of simple drugs from Greek and Syriac into Arabic, see: Martin Levey, *Early Arabic Pharmacology: An Introduction Based on Ancient and Medieval Sources* (Leiden: Brill, 1973), 100 ff.

⁵⁶ Avicenna, *al-Qānūn fī l-tibb* [henceforth *Canon*], (Cairo: Maṭba'at Būlāq, 3 vols., 1294 AH [1878]), i. 222–4.

⁵⁷ For a sense of the diverse array of textual and cultural sources—Greek, Arabic, Persian, Syriac, Akkadian and Sumerian—that contributed to the

(*tafāwut*) is when the same drug is given, in two places, two different degrees of the same quality, while a case of contradiction (*tanāquḍ*) is when the same drug is given, in two places, two opposite qualities, i.e. either warming and cooling, or drying and moistening. In some cases, Ibn Ghaylān points out inconsistencies between the natures given in the *Canon* and those given in another, much shorter Avicennan work, *al-Adwiya al-qalbiyya* (*Heart Remedies*). Such errors, according to the author, have resulted from the manner in which Avicenna compiles multiple earlier inventories of simple drugs into his own pharmacopeia, a manner, we are told, so careless and undiscerning that he failed either to notice that different earlier sources referred to the same drugs by different names or assigned different qualities to the same drug, or to attempt resolving these inconsistencies.⁵⁸

Take, for instance, sea onion, which appears in the *Canon* by two names. In one entry, under the letter *alif*, it is called '*isqīl*' and characterized by Avicenna as being warming in the third degree. In another entry, under the letter *ayn*, it is referred to as '*unsul*' and characterized as being warming in the second degree.⁵⁹ Avicenna, as Ibn Ghaylān points out, identifies both as the rat onion (*baṣal al-fa'r*), thus named because of its poisonous effect on rats. Yet he neither attempts to resolve the inconsistency nor even displays awareness of it.

Another example of discrepancy is the orach which, again, appears in the *Canon* by two names.⁶⁰ As '*sarmaq*', it is said to be cooling in the

evolution of the Arabic pharmacological nomenclature, see Peter E. Pormann, 'The Formation of the Arabic Pharmacology between Tradition and Innovation', *Annals of Science*, 68/4 (2011): 493–515, at 495 ff.

⁵⁸ How Avicenna used earlier sources in composing the pharmacological parts of the *Canon*, particularly the Book of Simple Drugs, still awaits detailed study. Relevant discussions are available in: Raphaela Veit, 'Greek Roots, Arab Authoring, Latin Overlay: Reflections on the Sources for Avicenna's *Canon*' in R. Wisnovsky *et al.* (eds.), *Vehicles of Transmission, Translation, and Transformation in Medieval Textual Culture* (Turnhout: Brepols, 2012), 353–69; Paavilainen, *Medieval Pharmacotherapy*; Pormann, 'Formation of the Arabic Pharmacology'. One major pharmacological source for Avicenna was, of course, Dioscorides, on whom see: Albert Dietrich, *Dioscurides triumphans. Ein anonymer arabischer Kommentar (Ende 12. Jahrh. n. Chr.) zur Materia medica*, (Göttingen: Vandenhoeck & Ruprecht, 2 vols., 1988).

⁵⁹ Ibn Ghaylān, *Tanbīh 'alā l-ikhtilāf*, no. 1; cf. Avicenna, *Canon*, i. 246, 396. For the purposes of the present article, it has not been necessary to verify whether or not any of the pairs of drug names mentioned do in fact refer to the same substance, or to determine Avicenna's sources for the names and natures of these drugs.

⁶⁰ Ibn Ghaylān, *Tanbīh 'alā l-ikhtilāf*, no. 8; cf. Avicenna, *Canon*, i. 389, 424.

first degree and moistening in the first degree. As *‘qataf’*, however, the same substance is said to be cooling in the second degree and moistening in the second degree.

Avicenna also writes that pistachio is warming in the upper second degree, and is more warming than walnut.⁶¹ In another place, however, he writes that walnut is warming in the third degree. ‘So how’, Ibn Ghaylān exclaims, ‘could something that is warming in the upper second degree be more warming than what is warming in the third degree!’⁶²

A case of contradiction can be found in the primary qualities given for alkanet (or bugloss), which under the heading *‘ibūjalsā’* is said to be warming, though the degree is not stated, and under the heading *‘shinjār’* is said to be cooling in the first degree.⁶³ Similarly, *biranjāsif* (wormwood) is said to be moistening in the first degree, while *qayṣūm* (southernwood), which Ibn Ghaylān says is undoubtedly the same plant, is said to be drying in the third degree.⁶⁴

One case results ultimately from an error of transcription. Black poplar is given two separate entries in the *Canon*, and is referred to in one entry as *ḥawar rūmī*, which is its correct name, and in the other as *jawz rūmī*, clearly a corruption of the former name (with a dot added under the *ḥā* and another above the *rā*).⁶⁵ In both cases, the tree is said to exude a gum known as *kabrubā*, which is discussed elsewhere in a devoted entry.⁶⁶ Whether the corruption of *ḥawar* into *jawz* was the result of Avicenna misreading one of his sources or occurred at an earlier stage in the transmission of pharmacological sources requires further investigation and goes beyond our current scope. Either way, it explains the inconsistency among the natures given in the three entries in question, which Ibn Ghaylān highlights.

Having listed fifteen such cases that he uncovered in the Book of Simple Drugs in the *Canon*, Ibn Ghaylān mentions one possible defence of Avicenna, namely that responsibility for these errors lies, not with the

⁶¹ Although each drug quality is given a degree of strength on a scale of one to four, there are further gradations within the degrees themselves. These are referred to using the adjectives ‘upper’ (*ākhir*) and ‘lower’ (*auwal*); hence, ‘lower second degree’, and ‘upper second degree’.

⁶² Ibn Ghaylān, *Tanbīh ‘alā l-ikhtilāf*, no. 5; cf. Avicenna, *Canon*, i. 280, 412.

⁶³ Ibn Ghaylān, *Tanbīh ‘alā l-ikhtilāf*, no. 4; cf. Avicenna, *Canon*, i. 260, 435.

⁶⁴ Ibn Ghaylān, *Tanbīh ‘alā l-ikhtilāf*, no. 15; cf. Avicenna, *Canon*, i. 267, 424.

⁶⁵ Ibn Ghaylān, *Tanbīh ‘alā l-ikhtilāf*, no. 9; cf. Avicenna, *Canon*, i. 284, 323.

⁶⁶ *Ibid.*, i. 338.

author, but with careless copyists of the *Canon*.⁶⁷ This, in all likelihood, reflects an actual line of defence taken by contemporary Avicennists, and is in fact a tactic that has been reproduced numerous times to exonerate various respected predecessors (most famously, al-Ghazālī and Ibn al-ʿArabī) of heterodox views found in their writings. Ibn Ghaylān, however, quickly dismisses this defence: even if some of these cases could be explained thus, it will be implausible to explain them all as due to mere scribal errors.

The author then provides a complete list of the cases—twelve altogether—of discrepancy and contradiction found between the drug natures given in the *Canon* and the natures attributed to drugs with the same names in Avicenna's *al-Adwiya al-qalbiyya*, which includes a much shorter inventory of simple drugs. Chicory, for instance, is said to be moistening in the former book, and drying in the latter.⁶⁸ Zedoary (wild ginger) is said to be warming and drying in the third degree in the *Canon*, but warming and drying in the second degree in the *Adwiya*.⁶⁹

Similar errors are reproduced by Ismāʿīl al-Jurjānī. For instance, sea onion appears in the *Dhakhīra* by two names, 'isqīl' and 'unṣul'.⁷⁰ The former is said to be warming in the third degree, and the latter warming in the second degree. Yet while Avicenna lists these two drugs under different alphabetical headings, al-Jurjānī categorizes one under medicinal foods (*aghḍhiya dawāʿiyya*), sometimes defined as substances that resemble the human body in their constitution and hence provide nourishment, and the other under pure drugs (*adwiya muṭlaqa*), that is, substances that do not resemble the human body in their constitution, and hence do not provide nourishment.⁷¹ Given that these two categories are distinct in essence, it is a contradiction to categorize the same substance under both. Yet, as Ibn Ghaylān puts it, this is an additional, 'scandalous error' that al-Jurjānī commits 'out of the imperative to follow [Avicenna] in another error'.

⁶⁷ Ibn Ghaylān, *Tanbīh ʿalā l-ikhtilāf*, p. 168 below.

⁶⁸ Ibn Ghaylān, *Tanbīh ʿalā l-ikhtilāf*, no. 23; cf. Avicenna, *Canon*, i. 326; id., *al-Adwiya al-qalbiyya* in *Min muʿallafāt Ibn Sīnā al-ṭibbiyya* (ed. Muḥammad Z. al-Bābā; Aleppo: Jāmiʿat Ḥalab, 1984), 209–94, at 272.

⁶⁹ Ibn Ghaylān, *Tanbīh ʿalā l-ikhtilāf*, no. 20; cf. Avicenna, *Canon*, i. 303; id., *Adwiya*, 271.

⁷⁰ Ibn Ghaylān, *Tanbīh ʿalā l-ikhtilāf*, no. 1.

⁷¹ On these drug categories see, for instance, Avicenna, *Canon*, i. 96.

Having cited a total of twenty-seven cases of inconsistency among the natures that Avicenna assigns to simple drugs, ten cases of which are reproduced in Ismāʿīl al-Jurjānī's book, Ibn Ghaylān concludes by informing his readers of his broader aims:

They are an insignificant trifle in comparison to Avicenna's nonsensicalities in the philosophical sciences, by which he has gone against the truth and contradicted the religion of Islam. I have exposed some of his errors in these sciences in an epistle I titled *Prolegomenon to the Refutation (al-Tawḥīʿa li-l-takḥīʿa)*, which is devoted to revealing the mixed syllogistic forms that he omitted to consider in logic, and in a book I wrote to prove that the world was generated in time.⁷²

Then follows a partly-legible sentence, the gist of which appears to be that since Ibn Ghaylān has already refuted Avicenna's philosophy more directly in these other, dedicated books, it will be inapt either to cite the type (*namaṭ*) of evidence listed in this short epistle with a view to undermining the integrity of his philosophical doctrines (hence, *an yustaʿmala bi-hi*), or to use it as a model of refutative argumentation to be applied to Avicenna's other, philosophical works, as it is unlikely that comparable inconsistencies be found therein (hence, *an yūjada bi-hi mithlu-hu*). He goes on to conclude the text as follows:

However, given the total unambiguity of [the evidence set out above], it lends itself well to silencing those who believe that [Avicenna] is immune from error and cannot conceivably go wrong.⁷³

In this conclusion, Ibn Ghaylān lays bare his true objective. He is not the least concerned here with the medicinal properties of the drugs mentioned in the text, nor does he exhibit much genuine interest or expertise in medicine, beyond what is expected of a man of learning with access to medical and lexical sources. Nowhere in this text does he attempt to engage in a positive pharmacological investigation to determine which of the conflicting drug natures given by Avicenna are correct, or indeed whether completely different sets of primary qualities and degrees should be affirmed. He effectively admits that his choice of subject-matter and tactic is opportunistic and stems purely from its

⁷² Ibn Ghaylān, *Tanbīh ʿalā l-ikhtilāf*, p. 173 below.

⁷³ Ibid.

instrumentality in undermining Avicenna's scholarly integrity and thereby defending orthodox theology. One can hardly think of a more expedient way to find faults in Avicenna's writings than to identify black-and-white contradictions and discrepancies in an inventory of drugs that classifies drugs simply and systematically using a pair of contrary primary qualities, with four degrees of potency for each primary quality. There will be no need to construct elaborate arguments, only to be rejected by the supporters of Avicenna, nor to respond to any counter-arguments. This way, Ibn Ghaylān seeks to illustrate, once and for all, Avicenna's fallibility and uncritical following of earlier sources, ultimately casting doubt on the integrity of his other writings, especially philosophical ones, and supporting his denunciation of the uncritical imitation (*taqlīd*) of Avicenna prevalent among his susceptible contemporaries.

A defender of Avicenna might refer Ibn Ghaylān to the introduction of the Book of Simple Drugs in the *Canon*, where it is explained that the properties of many remedies are only known through experience (*bi-l-tajriba*).⁷⁴ This makes the advancement of pharmacology an empirical and cumulative process that draws on the experimentation and observations of predecessors, as it would be impossible for a physician to experiment for himself with the hundreds of drugs he lists in an extensive pharmacopoeia to ascertain their medicinal properties and indications. Add to this the fact that pharmacology is far from being an exact science, a point suggested, for instance, in the conditions of experimentation that Avicenna details in order for drug properties to be ascertained 'reliably' (*bi-l-thiqa*)—he does not say, 'with certainty'.⁷⁵ If Ibn Ghaylān's central criticism of Avicenna in the *Tanbih* can be analysed into two accusations—that he compiles his Book of Simple Drugs mostly by plagiarizing earlier pharmacological sources, and that he displays a lack of deliberation and careful investigation in the process of compilation—only the latter accusation appears to be of any weight.

Yet even this latter accusation seems to stem from an arguably minor trend in Arabic pharmacology, associated in particular with the earlier philosopher al-Kindī (d. after 256/870), to which Avicenna does not subscribe. Al-Kindī attached much importance to the primary qualities of

⁷⁴ Avicenna, *Canon*, i. 224.

⁷⁵ *Ibid*, 224–6.

simple drugs in determining their actions, and used them to calculate the final natures of compound drugs in a formulaic fashion.⁷⁶ The presence of inconsistencies of the sort that Ibn Ghaylān chooses to concentrate on—a choice that probably has this trend in the background—might indeed cause serious difficulties in such a system. Yet though Avicenna consistently provides the natures of the simple substances he lists, he often reports the divergences of opinion among earlier sources. As one recent study notes:

The fact that Avicenna systematically mentions this kind of divergence, most of the time without indicating his own preference, strongly suggests a reluctance to take seriously the theory of medicinal degrees, and this reluctance is borne out in other parts of the *Canon*. [...] This reluctance is confirmed by the content of Book V, devoted to compounds. The introductory chapter, which expounds the reasons for using compounds, does not mention medicinal degrees at all.⁷⁷

Avicenna's apathy towards this theory concurs with his view that the actions of simple drugs can be determined by either deduction or experiment, and that drug actions that can only be known through experiment and observation will not be deducible from the drug's primary qualities.⁷⁸

Furthermore, the actions of compound drugs frequently do not follow uniformly and predictably from the primary qualities and actions of their simple ingredients, but must be ascertained by means of experience and observation. It is no wonder, therefore, that Avicenna displays a lack of rigour (for some of his readers, to an unacceptable extent) in the manner he compiles the natures of simple drugs from his sources.

⁷⁶ See, for instance, the overview of al-Kindī's method in Peter Adamson, *al-Kindī* (Oxford: Oxford University Press, 2007), 160–6; cf. Y. Tzvi Langermann, 'Another Andalusian Revolt? Ibn Rushd's Critique of al-Kindī's *Pharmacological Computus*' in J. P. Hogendijk and A. I. Sabra (eds.), *The Enterprise of Science in Islam* (Cambridge, MA: Massachusetts Institute of Technology Press, 2003), 351–72.

⁷⁷ Danielle Jacquart, 'Islamic Pharmacology in the Middle Ages: Theories and Substances', *European Review* 16/2 (2008): 219–27, at 224.

⁷⁸ Jacquart, 'Islamic Pharmacology in the Middle Ages', 223–4; cf. Avicenna, *Canon*, i. 224 ff.

Ibn Ghaylān's text fares better in its criticism of his contemporaries. Al-Jurjānī, by contrast to Avicenna, was a physician by profession and wrote his main medical work at an advanced stage in a long career of medical scholarship and practical experience. He is likely, as Ibn Ghaylān notes, to have detected the inconsistencies among the natures that Avicenna assigns to some drugs. So his failure to mention or to correct any such cases of inconsistency is indeed noteworthy and betrays a disinclination to deviate from Avicenna's teachings. It is perhaps at this point that Ibn Ghaylān's short text appears most compelling: It shows quite convincingly how one highly respected scholar followed Avicenna uncritically in the discipline (*ilm*) in which he specialized, to illustrate the broader point that this practice was prevalent in other philosophical and scientific disciplines, most importantly metaphysics and natural philosophy.

Finally, besides the *prima facie* scholarly objective of Ibn Ghaylān's text, one wonders, if we factor in the possibility that the intended readership may have included patrons of scholarship as well as scholars, whether his choice of a pharmacological theme for his attack on Avicenna may also stem from undeclared political considerations. Patrons supported scholarship for an array of socio-cultural motives, some expecting to enjoy lively philosophical and theological debates in return. Yet casting doubt on some of the most authoritative and respected cornerstones of the medical profession—the *Canon* and the *Dhakhīra*—not least when that undermined something as tangible and vital as the basic remedies necessary for the preservation and restoration of human health and for survival, goes beyond the purely academic and is more a cause for anxiety. What Ibn Ghaylān is trying to drive home is, effectively, that neither Avicenna's unorthodox metaphysics nor his unreliable medicine can be good for you, neither for your wellbeing in the hereafter, nor even for your health in this world. The *Tanbīh* may, as such, be an attempt to exclude the followers of Avicenna from the favour and predilection of wealthy and powerful patrons, thereby undermining the income and privilege of his opponents.

Despite the opportunism and, in some respects, frivolity of Ibn Ghaylān's pharmacological fault-finding exercise, the interest of his text does not lie merely in its curiosity and eccentricity. As a historical document, it reveals not only the lengths to which a key representative of the sixth/twelfth-century Ghazālian current went in his criticism of Avicenna, but equally the degree of authoritativeness that his contemporaries bestowed upon Avicenna's works. For historians of medicine, it might evidence a wider, and more positive, interest among post-Avicennan physicians to scrutinize, refine and consolidate the diverse received pharmacological lore.

IV. THE MANUSCRIPT COPY, EDITION AND TRANSLATION

Two manuscript copies of this text appear to be extant. One copy, mentioned in an article published in Iran in 1961, belonged to the Parvantā collection in Kabul, and is currently inaccessible.⁷⁹ So I have based my edition on the other copy, which appears in MS Tehran, Kitābhāna-yi Majlis-i Shūrā-yi Islāmī, 1538. According to the Library's catalogue, this large codex consists of 521 folios (17×23 cm, 28 ll.) and contains 32 short Arabic medical and pharmacological treatises by various authors.⁸⁰ The texts were copied in an elegant scholar's *naskh* during the ninth/fifteenth century by a physician called Muḥammad ibn Quṭb al-Ṭabīb, who was based in Iran.⁸¹

Ibn Ghaylān's text, according to the Library's catalogue, is the 25th item in the codex,⁸² and appears on three and a half pages, pp. 399–402.⁸³ The text appears somewhat out of place in the manuscript, given that, despite its pharmacological content, it has, as explained in the previous section, ulterior objectives and is of little practical value to the professional physician.

The text bears no evidence of collation. In some places, the copyist puts in the margin three triangularly-arranged dots (∴) to indicate words that he finds illegible in the exemplar, but nonetheless tries to transcribe. A small number of these and some other problematic places in the text have remained unresolved in my edition.

In the edition below, I have modified the text in accordance with modern spelling conventions, and have added nunation and diacritical marks where needed. As mentioned, the manuscript copy is untitled; but I have added a title which I have extracted from the preface. All additions to the manuscript text are inserted in square brackets. The manuscript copy is referred to as MS; and the text, where relevant, has been collated

⁷⁹ Dānīshpazhūh, 'Gūsha'i az tārikh-i mantiq', 291. The *World Survey of Islamic Manuscripts* (London: Al-Furqān Islamic Heritage Foundation, 4 vols., 1992–1994) does not refer to any published catalogues for this collection.

⁸⁰ For a description of the contents of this codex, see: 'Abd al-Ḥusayn Ḥā'irī, *Fibrīst-i Kitābhāna-yi Majlis-i Shūrā-yi Millī* (Tehran: Chāpkhāna-'i Majlis-i Shūrā-yi Millī, 1956), iv. 238–74.

⁸¹ Ḥā'irī, *Fibrīst*, 241.

⁸² A brief description of the text is provided in Ḥā'irī, *Fibrīst*, 267–8.

⁸³ As the manuscript has been paginated, rather than foliated, and as I do not have access to a copy of the whole codex, I am unable to provide folio numbers, and have no choice but to refer to the page numbers that appear in my copy of Ibn Ghaylān's text.

with published editions of the *Canon* and *al-Adwiya al-qalbiyya*. References to page numbers in the *Canon*, vol. i, and the *Adwiya*, are shown in square brackets, like this: [C. 246] and [H. 264] respectively.

In the translation, I have dealt with the drug names flexibly in the interest of clarity and accuracy. As a general rule, I use the Arabic drug names and give their English equivalents in brackets when the discussion is concerned with the names themselves. When the drug names are not at issue, I simply render them into English.

V. EDITION

[التنبه على الاختلاف والتفاوت والتناقض
في كتاب الأدوية المفردة من كتاب القانون في الطب لابن سينا]

بسم الله الرحمن الرحيم

قال الشيخ الإمام الفاضل أفضل الدين عمر بن علي بن غيلان البلخي:
إني تصفحت كتاب الأدوية المفردة من كتاب القانون في الطب لأبي علي بن سينا،
فوجدت من الاختلاف والتفاوت والتناقض ما يدل على أنّ جل¹ ما فيه منقول من كتب
متقدمة مختلفة من غير روية في نقله واعتناء بالتحقيق فيه. فأحببت² أن أتبّه الشركاء في
العلم على ذلك وأكفّهم³ مؤنة البحث وتعب الطلب. واقتصرت من جملة ذلك على إثبات
ما يختصّ بطبائع الأدوية. فإنّ كل دواء كان له اسمان، وأولهما حرفان متباينان - ولذلك
يدخلان في بابين من أبواب الحروف المعجمة - قد ذكر طبعه في أحدهما مخالفاً لما ذكره في
الباب الآخر، إلّا في قليل من ذلك. وأيضاً ما أورد من الأدوية في كتابه الموسوم بالأدوية
القلبية جعل طبع كثير منها هناك مخالفاً لما في كتاب القانون.

والعجب أن السيّد الإمام إسماعيل الجرجاني رحمه الله نقل في أكثر المواضع ما في
القانون إلى كتابه المسمى ترجمة الذخيرة الخوارزمشاهية من غير تفاوت واختلاف في كلام
أبي علي، مع إكبابه مدة عمره الطويل على تصنيف الكتب الطبية ودرسها ونقل الكلام من
كتاب منها إلى آخر والبسط مرة والتلخيص أخرى، ولم ينته على مواضع الغلط، أو لم
ينتبه، وهو أبعده.

فنقلت الأقاويل المختلفة بأعيانها إلى أن يتيسر⁴ بعون الله تعالى تمييز الحق عن الباطل،
وهو الموفق لذلك والعاصم من الزلل.

¹ أجل MS

² ماحبب MS

³ MS والعيتهم (Marked with a three-dotted sign [. .] in the margin. See above, p. 158.)

⁴ يتعسر MS

VI. TRANSLATION
 [DRAWING ATTENTION TO THE
 INCONSISTENCY, DISCREPANCY AND
 CONTRADICTION IN THE BOOK OF SIMPLE
 DRUGS IN AVICENNA'S CANON OF
 MEDICINE]

The eminent shaykh and imām Afḍal al-Dīn ‘Umar ibn ‘Alī ibn Ghaylān al-Balkhī wrote:

I have gone through the Book of Simple Drugs in the *Canon of Medicine* by Abū ‘Alī ibn Sīnā, and have found enough inconsistency, discrepancy and contradiction therein to indicate that the bulk of its contents are compiled from different earlier books with neither deliberation in the compilation process nor careful investigation. So it is my desire here to bring this to the attention of my fellow scholars, thus saving them the effort of research and the trouble of enquiry. Of the totality of [the errors that I identified,] it will suffice here to record those that pertain to the natures of drugs. For, except in a minority of cases, whenever a drug has two names starting with two different letters, and is thus listed under two alphabetical headings, he will give its nature in one place differently from what he gives in the other place. Similarly, the natures he assigns to many of the drugs he lists in his book entitled *Heart Remedies* are different from those found in the *Canon*.

What is astonishing is that in most cases al-Sayyid al-Imām Ismā‘īl al-Jurjānī (may God have mercy on his soul) reproduced the contents of the *Canon* in his own book titled *Translation of the Khwārazmshāhī Treasure*, without modifying or changing what Abū ‘Alī had written.⁵ This is despite him having devoted his long lifetime to the writing and study of medical books, copying things from one book to another, expanding some texts and abridging others. Yet he fails to recognize these errors. Or, he might not have even noticed them, which is more unlikely.

I have, hence, excerpted here the inconsistent statements verbatim, [thereby making them available] until it become possible, with the assistance of God exalted, to distinguish what is true from what is false. Verily, it is He who guides to [truth] and grants immunity from error.

⁵ Henceforth, Avicenna and al-Jurjānī are referred to as Abū ‘Alī and al-Sayyid, respectively.

- [1] فمن ذلك الإستقيل والعنصل. وقد ذكرهما في باب الألف والعين، وقال ماهية كل واحد منها أنه بصل الفأر، لأنه يقتل الفأر. وقال في طبع الإستقيل إنه حار في الدرجة الثالثة، يابس في حدود الثانية، وفي طبع العنصل إنه حار يابس في الثانية. والسيد الإمام جعل الأدوية المفردة ثلاثة أقسام: الأول الأغذية السوائية؛ الثاني الأدوية الحيوانية؛ الثالث في الأدوية المطلقة. فجعل الشيء الواحد، وهو الإستقيل، من الأغذية السوائية ومن الأدوية المطلقة معاً، مع تباينها في الحد والحقيقة. وذكره باسمين مترادفين في القسمين جميعاً، وقرن بكل اسم ما ذكره أبو علي، فارتكب خطأ فاحشاً ضرورة أن يتبع أبا علي في خطأ آخر.
- [2] ومن ذلك الأهل. قال فيه إنه ثمرة⁶ العرعر، وهو عند بعضهم حار يابس في الثالثة. ثم ذكر العرعر في باب العين، وقال إن حبه حار في الأولى، يابس في الثانية.
- [3] ومن ذلك أنه قال في إصطرك إنه ضرب من الميعة، وقيل هو صمغ الزيتون، وهو حار في الثالثة يابس في الأولى. ثم قال عند ذكر اللبنى إنها الميعة، ويقال لسائلها عسل اللبنى والإصطرك، وهي حارة في الأولى، يابسة في الثانية. والسيد أورد الأهل والعرعر والإصطرك واللبنى في ترجمة الذخيرة على ما ذكرنا من التفاوت ومن غير التفاوت.
- [4] ومن ذلك أنه قال إبولس⁷ هو خس الحمار وشنقار وشنجار. وقال في إبولس حار يابس. ثم ذكر في باب الشين شنجار، وقال هو خس الحمار، وهو بارد في الأولى، يابس في الثانية. والسيد قال في إبولس وشنجار مثل ما في القانون، وأحال بخس الحمار على شنجار، ولم يسلم من التناقض أيضاً.
- [5] ومن⁸ ذلك أنه ذكر أنّ الفستق أشد حرارة من الجوز، وهو حار في آخر الثانية. وقال في الجوز إنه حار في الثالثة. فكيف يكون الحار في آخر الثانية أشد حرارة من الحار في الثالثة! وجعل [الجوز] في ييس في أول الثانية، ثم قال ويبسه أقل من حرّه. فوقع [في] شبهة عظيمة. والسيد نقل كلامه بعينه في الموضوعين.

⁶ شجرة Canon

⁷ In other sources, this also appears as *ibūhalsā* and *ibūkhalsā*.

⁸ Page 400.

[1] One such case is *isqīl* (sea onion) and *ʿunṣul* (sea onion). He includes these under the letters *alif* and *ʿayn*, and writes that the essence of each is rat onion, [thus named] because it kills rats. On the nature of *isqīl*, he writes that it is warming in the third degree and drying in approximately the second degree, whereas on the nature of *ʿunṣul*, he states that it is warming and drying in the second degree [C. 246, 396].

Al-Sayyid al-Imām divides simple drugs into three divisions: first, medicinal foods; second, animal drugs; and third, pure drugs. So he considers one and the same thing, namely *isqīl*, as both a medicinal food and a pure drug, although the two are different in their definition and essence. He refers to it in these two places by two synonymous names, and for each name assigns what Abū ʿAlī had specified. He has thus committed a scandalous error out of the imperative to follow Abū ʿAlī in another error.

[2] Another case is *abhal* (juniper), on which he states that it is the fruit of *ʿarʿar* (juniper) and that, according to some, it is warming and drying in the third degree [C. 248–9]. He then lists *ʿarʿar* under the letter *ʿayn* and writes that its berry is warming in the first degree and drying in the second [C. 395].

[3] Another case is that in the entry on *iṣṭurak* (storax) he states that it is a type of *mayʿa* (storax), that it is sometimes identified with olive gum, and that it is warming in the third degree and drying in the first [C. 251]. But in the entry on *lubnā* (storax), he states that it is *mayʿa*, that its sap is called *ʿasal al-lubnā* (storax honey) and *iṣṭurak*, and that it is warming in the first degree and drying in the second [C. 350].

Al-Sayyid discusses *abhal*, *ʿarʿar*, *iṣṭurak* and *lubnā* in the *Translation of the Treasure* with the same aforementioned discrepancies and other problems.

[4] Another case is that he writes that *ibūjalsā* (alkanet) is identical to *khass al-ḥimār* (alkanet), *shinqār* (alkanet) and *shinjār* (alkanet). In the entry on *ibūjalsā* he states that it is warming and drying [C. 260].⁹ Then, under the letter *shīn*, he includes *shinjār* and states that it is *khass al-ḥimār* and is cooling in the first degree and drying in the second [C. 435]. Al-Sayyid writes on *ibūjalsā* and *shinjār* the same as what is in the *Canon*, and refers to *shinjār* in his entry on *khass al-ḥimār*, thereby falling into the same contradiction.

[5] Another case is that he writes that pistachio is more warming than walnut, and that it is warming in the upper second degree [C. 412]. In the entry on walnut, he states that it is warming in the third degree [C. 280]. But how could something that is warming in the upper second degree be more warming than what is warming in the third degree! He also indicates that walnut is drying in the lower second degree, and that its drying power is weaker than its warming power. He has thus committed a grave error. Al-Sayyid reproduces the same statements in both places.

⁹ Avicenna here cites Galen.

[6] ومن ذلك جوز الطرفاء، فقد ذكر أنه كرمازك، وحكم أن حرارته كالمعتدل أو في أول الأولى¹⁰، وتخفيفه في آخر الأولى أو¹¹ فوفه. ثم قال وهو عند قوم بارد في الأول، يابس في الثانية.¹² ولا شك أن المفهوم من الموضع الأول أنه عنده حار، ومن الموضع الثاني إذ¹³ ينسب القول المذكور إلى أحد أنه بارد. وهو تناقض يجب التنبيه عليه.

[7] ومن ذلك أنه ذكر في تعريف اللاذن أنه رطوبة تتعلق بشعر المعز الراعية ولحاهها إذا رعت نباتاً يعرف بقيسوس¹⁴، إلى تمام بيان كيفية تولد تلك الرطوبة وتعلقها. ثم قال هو حار في آخر الأولى، يابس في الثانية. ثم ذكر قيسوس¹⁵ في باب القاف، وقال: أصنافه ثلاثة، أسود وأبيض وأحمر، وجميعه حريف قابض. وأحد أصنافه يكون منه شيء يستسى اللاذن. والقيسوس في الأصل هو¹⁶ اللاذن أو غيره، وإنما متقاربا بالأحوال¹⁷. وطبيعته إلى الحرارة، وربما كان في بعض أجناسه بارداً. واللاذن نفسه حار في آخر الثانية. وقال بعد ذلك في خواص القيسوس: وأما المعروف من جملته باللاذن فهو¹⁸ كذا وكذا. فجعل حرارة اللاذن مرة في الأولى وأخرى في آخر الثانية. وتشوش كلامه في ماهية اللاذن عند ذكر القيسوس، فأوهم أنه من أصناف القيسوس وأجزائه بعد أن جعله¹⁹ رطوبة تركب القيسوس.

[8] ومن ذلك ما ذكر في السرمق أنه القطف، وهو بارد رطب في الأولى. وفي القطف أنه السرمق، وهو بارد إلى الثانية، رطب فيها.

[9] ومن ذلك أنه ذكر جوز رومي في ثلاثة مواضع. فذكره مرة في باب الجيم أنه يسمى أكبروس، يسخن شديداً في الثالثة، ويخفف في الأولى، صمغه بالغ في التسخين، وزهره أشد تسخيناً. وذكره في باب الحاء بهذا اللفظ من غير تفاوت، ثم قال إن الرومي²⁰ من هذه الشجرة صمغها الكهربا، ونحن نورد له باباً، وهو معتدل اليبس. وقال في الكهربا عند

¹⁰ MS الأول

¹¹ MS و

¹² Canon يابس في الثانية -

¹³ MS إذا

¹⁴ Canon قاسوس

¹⁵ Canon قسوس

¹⁶ MS وهو

¹⁷ MS الأول

¹⁸ MS من جملته بالبلاد فهو +

¹⁹ MS إن جملته

²⁰ MS الردي

[6] Another case is *jawz al-ṭarfā'* (tamarisk). He writes that it is the same as *kazmāzak* (tamarisk), and he avers that its warming nature is almost neutral or in the lower first degree, and that its drying nature is in the upper first degree or higher. He then states that, according to some people, it is cooling in the first degree and drying in the second [C. 284]. Undoubtedly, what is implied in the former point is that in his view it is warming; and [what is implied] in the latter point, where he attributes the foregoing view to someone else, is that it is cooling. This is a contradiction, which ought to be brought to attention.

[7] Another case is that he defines ladanum as a viscous substance that adheres to the hair and beards of grazing goats when they browse on a plant known as *cistus*, and he goes on to explain the manner in which that viscous substance is produced and adheres [to the goat's hair]. He then states that it is warming in the upper first degree and drying in the second degree [C. 350]. In the entry on *cistus* (*qīsūs*) under the letter *qāf* [C. 422–3], he writes:

It is of three types, black, white and red, all of which are acrid and astringent. Out of one of these types, something known as ladanum is produced. *Cistus* originally is ladanum or other than that; both are closely comparable in their characteristics. It tends to be warming in nature, though some of its types can be cooling. Ladanum itself is warming in the upper second degree.

On the properties of *cistus*, he then writes: 'As to the type known as ladanum, it is such and such'. So, in one place he considers ladanum warming in the first degree, and elsewhere warming in the upper second degree. Furthermore, his explanation of what ladanum is became confused when he discussed *cistus*, suggesting that it is a type or part of *cistus* having already considered it a viscous constituent of *cistus*.

[8] Another case is that he writes in the entry on *sarmaq* (orach) that it is the same as *qaṭaf* (orach), and is cooling and moistening in the first degree [C. 389]. However, in the entry on *qaṭaf*, he states that it is the same as *sarmaq*, and is cooling up to the second degree, and moistening in the same degree [C. 424].

[9] Another case is that he discusses *jawz rūmī* in three places.²¹ He first includes it under the letter *jīm*, and states that it is also called *akīrūs* (black poplar), and is extremely warming in the third degree and drying in the first, and that its gum is extremely warming and its flowers even more warming [C. 284].²² He then includes it under the letter *ḥā'*, referring to it with exactly the same expression [C. 323].²³ There he states that the gum of the *rūmī* type (black poplar²⁴) of this tree is known as *kabrubā*, which he will discuss in a

²¹ See p. 152 above.

²² Here the substance is named '*al-jawz al-rūmī*'.

²³ Here the substance is named '*ḥawar*'. Clearly, the expression is not 'exactly' the same. However, without diacritics, *ḥawar* and *jawz* have the same orthography. The alternative rendering, 'describing both in exactly the same way', does not work, since the descriptions of the two drugs are in fact dissimilar.

²⁴ Literally, Roman or Byzantine poplar.

ذكره إنه صمغ شجرة يقال لها الجوز²⁵ الرومي، وهو حار في الأولى، يابس في الثانية، وقوته شبيهة بقوة زهر شجرته. فجعل طبع الشجرة في موضعين حاراً في الثالثة، وفي موضع حاراً في الأولى. وقال أيضاً قوته شبيهة بقوة زهرة هذه الشجرة، لكنه أبرد منها. ولا شك أنه أراد به التسخين. وقد جعل زهرها أشدّ تسخيناً، على أن الشجرة إذا كانت شديدة التسخين في الثالثة يبعد أن يكون صمغها قليل التسخين.

[10] ومن ذلك أنه قال في المصطكى إنه حار يابس في الثانية، وهو أقل تسخيناً وتخفيفاً من الكندر. وجعل الكندر حاراً في الثانية، مجففاً في الأولى. فجعل المجفف في الثانية أقل تخفيفاً من المجفف في الأولى. والسيد وافقه في ذلك.

[11] ومن ذلك أنه قال في دهمست²⁶ إنه شجرة الغار، وإن حبه أفضل²⁷ ما فيه، وهو حار في الثالثة، يابس في الثانية. [وقال في الغار إن حبه أسخن] وقشوره أقل حرارة، [وهو بالجملة حار يابس في الثانية]. ومفهوم الظاهر من التركيب أن المذكور في الموضوعين²⁸ طبع الشجرة بجميع أجزائها، فيلزم أن تكون حرارتها تارة في الثالثة وأخرى في الثانية. ولذلك إن حمل المذكور في الموضوعين على أنه طبع الحب – لأنه جعل الحب أسخن من قشره وأقوى ما فيه – فيصير الأقوى حاراً في الثانية، والأضعف في الثالثة.

[12] ومن ذلك أنه ذكر هيل بوا وهال بوا وقال إنه خير بوا، وهو حار في الأولى، يابس في الثانية²⁹. ثم ذكر خير بوا، وقال إنه حار يابس في الثالثة. وكذلك قال السيد.

[13] ومن ذلك أنه قال عند ذكره حبة الخضراء إن صمغها حار، فيه يبس قليل. ثم ذكره في باب الضاد، الضرو، وقال هناك رب الضرو، وهو صمغه، يجلب إلى مكة، ويسمى بهذا الاسم، وهو حار في الثالثة، رطب في الأولى. والضرو صمغ هذه الشجرة في اللغة [...]³⁰.

²⁵ Alternatively, this could be 'al-ḥawar'. See p. 153 above.

²⁶ MS دهشت

²⁷ أقوى Canon

²⁸ Page 401.

²⁹ Canon الثالثة

³⁰ MS من عبر يفصد بالكنار (Marked with a three-dotted sign [: .] in the margin. See above, p. 158.)

dedicated entry and is neutrally drying. In the entry on *kahrubā*, he mentions that this is the gum of a tree known as *jawz rūmī*, and then states that it is warming in the first degree and drying in the second, and that its power is similar to that of the flower of its tree [C. 338]. So in two places he states that the nature of the tree is warming in the third degree, whereas in another place he says that it is warming in the first. He also writes that its power is similar to that of the flower of this tree, but is less warming³¹ than [the flower] [C. 338]. By this [i.e. 'its power is similar...'], he was undoubtedly referring to the power of warming. So he has made the flower more warming, despite the fact that when a tree is extremely warming in the third degree its gum is unlikely to be moderately warming.

[10] Another case is that in the entry on mastic, he asserts that it is warming and drying in the second degree, and is less warming and drying than frankincense [C. 360]. But he then states that frankincense is warming in the second degree and drying in the first [C. 337]. He thus made what is drying in the second degree less drying than what is drying in the first degree. Al-Sayyid follows him in this.

[11] Another case is that he states in the entry on *dahmast* (laurel) that it is *ghār* (laurel) tree, that its berry is the most efficacious part in it, and that it is warming in the third degree and drying in the second [C. 293]. In the entry on *ghār* he writes that its berry is more warming and its bark less warming, and that overall it is warming and drying in the second degree [C. 468]. The [sentence] structure in both places suggests that he is referring to the nature of the whole tree, including all its parts; and it follows that in one case it is warming in the third degree, and in the other case warming in the second. So if what is referred to in both places is taken to be the nature of the berry – since he asserts that the berry is more warming than the bark, and the most powerful part of the tree – then what is more powerful will be warming in the second degree, and what is weaker will be warming in the third.³²

[12] Another case is that in the entry on *hīl bawwā*, or *hāl bawwā*, (cardamom) he states that it is the same as *khīr bawwā* (cardamom), and is warming in the first degree and drying in the second [C. 298]. But in the entry on *khīr bawwā* he writes that it is warming and drying in the third degree [C. 464]. Al-Sayyid does the same.

[13] Another case is that in the entry on the fruit of *khadrā'* (terebinth) he writes that its gum is warming and slightly drying [C. 323]. He then mentions it under the letter *dād* as *darw* (terebinth), and there states that *rubb al-darw* (terebinth extract), which is its gum, is brought to Makka, and is named thus, and that it is warming in the third degree and moistening in the first [C. 466]. In the [Arabic] lexicon, *darw* is the gum of this tree [...].

³¹ Literally, more cooling.

³² The referent of 'what is weaker' here is not obvious.

[14] ومن ذلك أنه ذكر في اليتوعات أن لبن اللاعية من جملة اليتوعات، حار يابس في الرابعة وغير ذلك [منه] في الثانية إلى الثالثة. وعند هناك الشبرم والمازريون.

[15] ومن ذلك أنه جعل برنجاسف حاراً رطباً في الأولى،³³ والقيصوم حاراً في الأولى، يابساً في الثالثة. ولا شك أن القيصوم هو³⁴ برنجاسف. وكذلك وجد في بعض النسخ من القانون.

فهذا ما اتفق العثور عليه من التفاوت والتناقض في طباع الأدوية في أدوية كتاب القانون. ويمكن أن يحمل حامل بعض هذا³⁵ الاختلاف على سهو النساخ في النسخ المختلفة، لكن لا يمكنه حمل الجمع على ذلك. ومع هذا لو كان للناقل عناية بتصحيح النقل لوجب أن لا يذكر أحوال التواء الذي له اسمان بتامها في موضع، ثم يحيل عليه عند ذكره بالاسم الآخر.

وأما الاختلاف الذي بين المذكورين في القانون والمذكور في الأدوية القلبية:

[16] فمن ذلك ما في قشر الأترج وبزره. فقد ذكر في القانون أن قشره حار في الأولى، يابس في آخر الثانية، وبزره³⁶ حار في الأولى مجفف في الثانية.³⁷ وفي الأدوية القلبية أن القشرة حار يابس في الثالثة، والبزر بارد يابس في الثانية؛³⁸ وجعل علة تقويته للقلب أنه يمتن جوهر الروح لأنه بارد يابس في الثانية.³⁹

والسيد فعل بالأترج ما فعل بالإسقبل، فجعله من الأغذية الدوائية، وأورده في القسم الأول الذي هو فيها، وجعله من الأدوية المطلقة، وذكره في القسم الذي فيها. وقال في قشره وبزره في القسم الأول مثل ما في [القانون، وقال فيها في القسم] الثاني مثل ما في الأدوية القلبية.

³³ In *Canon*, vol. i. 267, this substance is said to be 'cooling and moistening in the first degree', rather than 'warming and moistening in the first degree', as in Ibn Ghalyān's text. A marginal note in a later hand highlights the discrepancy committed by Avicenna:

قد وجدت في أكثر نسخ القانون أن البرنجاسف بارد رطب في الأولى. وهذا شيء عجيب غريب من العامة خصوصاً من الشيخ.

³⁴ MS وهو

³⁵ MS هذه

³⁶ MS وبزره

³⁷ *Canon* الثالثة

³⁸ *Adwiya* الثالثة

³⁹ *Adwiya* الثالثة

[14] Another case is that in the entry on euphorbias he writes that sun spurge latex is a euphorbia, and that it is warming and drying in the fourth degree, whereas other [euphorbias] are [warming and drying] in the second or third degrees [C. 334, 336]. However, at the same [fourth degree in both respects] we also find [two other euphorbias, namely] mezereon and euphorbia pithyusa [C. 438, 361].

[15] Another case is that he states that *biranjāsif* (wormwood) is warming and moistening in the first degree, and *qaysūm* (southernwood) warming in the first degree and drying in the third [C. 267, 424]. However, *qaysūm* is undoubtedly the same as *biranjāsif*, as indeed is stated in some copies of the *Canon*.⁴⁰

These are the cases of discrepancy and contradiction pertaining to the natures of drugs that I found in the [Book of Simple] Drugs in the *Canon*. Even though some might try to explain some of these inconsistencies in terms of scribal errors in different copies, not all can be explained thus. This being the case, had the compiler been scrupulous enough to fix up what he was compiling, he would have refrained from detailing all the characteristics of a drug that is known by two names in one place, and then referring to [the former place] when he discusses [the drug] under its other name.⁴¹

As to the inconsistency between [the natures of drugs] given in the *Canon* and those given in *Heart Remedies*:

[16] One such case is what he says concerning the peel and seed of citron. In the *Canon*, he states that its peel is warming in the first degree and drying in the upper second, and its seed warming in the first degree and drying in the second [C. 257]. However, in *Heart Remedies*, he states that its peel is warming and drying in the third degree, and its seed cooling and drying in the second, and he indicates that the cause of its efficacy in strengthening the heart is that it fortifies the pneuma by virtue of being cooling and drying in the second degree [H. 264–5].

Al-Sayyid treats citron in exactly the same way he treats sea onion. He considers it a medicinal food and hence includes it in the first part [of the Book of Simple Drugs in the *Treasure*] devoted to [medicinal foods], and then considers it a pure drug and hence includes it in the part devoted to [pure drugs]. In the former part he writes on its peel and seed the same as what is in the *Canon*, while in the latter part he writes the same as what is in *Heart Remedies*.

⁴⁰ This is not stated in the published editions of the *Canon*.

⁴¹ I take ‘*nāqil*’ (compiler) to be a reference to Avicenna, rather than the aforementioned copyists. This point echoes the opening sentence of the epistle.

[17] ومنه جعله البهنم في القانون حاراً يابساً في [الثانية، وفي الأدوية القلبية حاراً في الثانية يابساً في] الأولى.

[18] ومنه جعله الدارصيني في القانون حاراً يابساً في الثالثة، وفي الأدوية القلبية حاراً في آخر الثانية، يابساً في الثالثة.⁴² والتفاوت بين أجزاء الثانية وبين الثالثة، وإن كان سهلاً، فلا محالة يكون تفاوتاً، ويحسن التنبيه عليه. ولذلك حكم بالتفاوت فيه.

[19] يشبه⁴³ هذا ومثله أنه جعل الباذروج حاراً في الأولى إلى الثانية، يابساً في أول الأولى في القانون، وحاراً يابساً في الأولى⁴⁴ مطلقاً في الأدوية القلبية. فلم يخل⁴⁵ عن تفاوت ما.

[20] وكذلك جعل في القانون الزرنباد حاراً يابساً في الثالثة، وفي الأدوية القلبية حاراً يابساً في الثانية.

[21] وأيضاً جعل النعنع [حاراً] في آخر الأولى، وببسه في أول الثانية في الأدوية القلبية، وجعلها في الثانية في القانون.

[22] ومثل ذلك ما جعل في الأدوية القلبية بالقاقلة⁴⁶ وقرفة الطيب وقرفة الدارصيني فيبسها في آخر الثانية، وجعل القاقلة في القانون حارة يابسة في الثالثة، وجعل قرفة القرنفل حارة يابسة إليها أيضاً.

[23] ومن التفاوت الذي يؤدي إلى التناقض أنه جعل الطرحشقوق⁴⁷ في القانون رطباً، وفي القلبية يابساً.

[24] ومن الذي ليس يسهل أنه جعل المسك في القانون حاراً يابساً في الثانية، وفي الأدوية القلبية في الثالثة.

[25] ومنه [أنه] جعل⁴⁸ يبس العنبر في القانون في الأولى، وفي الأدوية القلبية في الثانية.

[26] ومنه أنه جعل يبس الصندلين (؟) في القانون في الثالثة، وفي القلبية جعله في الثانية.

⁴² MS الثالث

⁴³ MS نسبه

⁴⁴ MS الاول

⁴⁵ MS يجعل

⁴⁶ MS والقاقلة

⁴⁷ In other sources, this also appears as *ṭarḥashqūm*, *ṭalḥashqūq* or *ṭarshaqūq*.

⁴⁸ Page 402.

[17] Another case is that in the *Canon* he considers behen warming and drying in the second degree, while in *Heart Remedies* it is said to be warming in the second degree and drying in the first [C. 266–7; H. 268].

[18] Another case is cassia, which in the *Canon* he considers warming and drying in the third degree, and in *Heart Remedies* warming in the upper second degree and drying in the third [C. 289; H. 269]. Although the discrepancy between the [upper] divisions within the second degree and the third degree is only slight, it is still a discrepancy and deserves to be pointed out. For this reason, I count this as a discrepancy.

[19] Similarly, in the *Canon* he considers basil warming in the first to second degrees and drying in the lower first, whereas in *Heart Remedies* it is said to be warming and drying in the first degree without qualification [C. 274; H. 267]. There is some discrepancy here.

[20] Likewise, he considers zedoary warming and drying in the third degree in the *Canon*, and warming and drying in the second degree in *Heart Remedies* [C. 303; H. 271].

[21] Also, he considers mint warming in the upper first degree and drying in the lower second degree in *Heart Remedies*, and considers it [warming and drying] in the second degree in the *Canon* [C. 375; H. 277].

[22] A similar case is that in *Heart Remedies* he considers cardamom (*qāqulla*), cinnamon (*qirfat al-tīb*) and Malabar bark drying in the upper second degree. However, in the *Canon* he considers cardamom warming and drying in the third degree, and cinnamon (*qirfat al-qaranful*) warming and drying in the same degree [C. 417; H. 279].⁴⁹

[23] One case of discrepancy that results in contradiction is that he states that chicory is moistening in the *Canon*, but drying in *Heart Remedies* [C. 326; H. 272].⁵⁰

[24] A further, not insignificant case is that in the *Canon* he considers musk warming and drying in the second degree, but [warming and drying] in the third degree in *Heart Remedies* [C. 360; H. 276].

[25] Another case is that in the *Canon* he considers ambergris drying in the first degree, but [drying] in the second degree in *Heart Remedies* [C. 398; H. 278].

[26] Another case is that in the *Canon* he considers [...] drying in the third degree, but [drying] in the second degree in *Heart Remedies*.

⁴⁹ Avicenna here identifies *qirfat al-qaranful* with *qirfat al-tīb*.

⁵⁰ This rather seems to be a case of simple contradiction.

⁵¹ The text here reads ‘*ṣandalīm*’. No substance by this name is listed in either the *Canon* or the *Adwīya*, or indeed in other pharmacological sources. It cannot be sandalwood (*ṣandal*), as in both works it is said to be drying in the second degree (C. 414; H. 279). Only zedoary (*zarunbād*) is said to be drying in the third degree in the *Canon* (303) and in the second degree in the *Adwīya* (271); but it has already been mentioned (no. 20).

[27] ومثل أنه جعل السوسن الآزاد في القانون حار يابساً في الثانية، وفي الأدوية القلبية قال السوسن الآزاد قريب الطباع من الزعفران، ولكنه أنقص حرّاً ويبساً منه. وذكر في كلا الكتاين أنّ الزعفران حار في الثانية، يابس في الأولى. فجعل الحار اليابس في الثانية أنقص حرّاً ويبساً من الحار في الثانية اليابس في الأولى. وهو عجيب جداً!

هذا ما اتفق العثور عليه من هذا النمط. وهو نزر يسير بالقياس إلى مخطرفات ابن سينا في العلوم الحقيقية التي ناقض فيها الحق وخالف بها دين الإسلام. وقد بينت⁵² بعض خطئه في تلك العلوم في رسالة سميتها بالتوطئة للتخطئة، وهي مقصورة على بيان ما سهى فيه من أشكال الأقيسة في مختلطاتها من علم المنطق، وفي كتاب صنفته⁵³ في إثبات حدوث العالم. فلذلك كان هذا النمط من الكلام يذعن⁵⁴ أن يستعمل به ويثبت أن⁵⁵ يوجد به مثله.⁵⁶ لكن لكمال ظهوره صلح لتسكيت من يعتقد⁵⁷ أنه معصوم عن الزلل وأن الخطأ عليه محال. تم بعون الله.

⁵² ثبت MS

⁵³ صنفه MS

⁵⁴ يذعن؟ MS

⁵⁵ وان MS

⁵⁶ Dānīshpazhūh ('Gūsha'i az tārīkh-i manṭiq', 291) provides a transcription of this concluding paragraph from the manuscript copy of the Parvantā collection. However, it does not assist in improving this sentence.

⁵⁷ يعتمد MS

[27] Another example is that in the *Canon* he considers iris warming and drying in the second degree, and states in *Heart Remedies* that iris is close in its nature to saffron, but is less warming and drying [C. 383; H. 277]. In both books, he writes that saffron is warming in the second degree and drying in the first [C. 306; H. 270]. He has thus made what is warming and drying in the second degree less warming and drying than what is warming in the second degree and drying in the first, which is most baffling!

These are the cases of [inconsistency, discrepancy and contradiction among the natures assigned by Avicenna to simple drugs] that I found. They are an insignificant trifle in comparison to Avicenna's nonsensicalities in the philosophical sciences, by which he has gone against the truth and contradicted the religion of Islam. I have exposed some of his errors in these sciences in an epistle I titled *Prolegomenon to the Refutation*, which is devoted to revealing the mixed syllogistic forms that he omitted to consider in logic, and in a book I wrote to prove that the world was generated in time. [...] ⁵⁸ However, given the total unambiguity of [the evidence set out above], it lends itself well to silencing those who believe that he is immune from error and cannot conceivably go wrong.

⁵⁸ A largely indecipherable sentence here. See p. 154 above.

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