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Fabrizio Speziale

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A 14th Century Revision of the Avicennian and Ayurvedic Humoral Pathology: The Hybrid Model by Šihāb al-Dīn Nāgawrī

Oriens, 42, 3-4, 2014, pp. 514-532

Fabrizio Speziale^Φ

Abstract. The fundamental concepts of the theory of humours of Avicennian thought are often seen as static and a-historical entities whose identity and function were defined once and for all in the classical sources. This article questions this view by looking at the *Šifā al-marāz*, a Persian medical handbook written in India by Šihāb al-Dīn Nāgawrī in 790/1388. In the first chapter, Nāgawrī proposes a shift of perspective in the classical categorisation of humoral pathology of the Arabic and Persian texts. His proposal is based on a combination of Avicennian and Ayurvedic physicians' views through the assimilation of notions of the latter into the conceptual framework of the former. Nāgawrī's audacious proposal addresses a key question, since the classification of humours constitutes a central element of the doctrinal identities of both the Avicennian and the Ayurvedic schools. Moreover, a closer reading of this chapter raises the question of whether Nāgawrī's intent was to revise both doctrines at the base of his hybrid nosography. His model can be read not only as a key adjustment to the Avicennian view but also as a reconsideration of the Ayurvedic theory which does not count blood among the humours.

[p. 515] The *Šifā al-marāz* is a Persian versified medical treatise written by Šihāb al-Dīn ibn 'Abd al-Karīm Qiwām-i Nāgawrī, an Indian Muslim scholar of the second half of the 14th century. The text chiefly deals with Avicennian medical materials but it also includes elements drawn from Ayurvedic medicine. This article looks at the first chapter of this work where Nāgawrī proposes a shift of perspective in the classical categorisation of humoral pathology of the Arabic and Persian Avicennian texts. His proposal is based on a combination of the Avicennian and Ayurvedic physicians' views through the assimilation of notions of the latter into the conceptual framework of the former. Nāgawrī's proposal to combine them in a new perspective constitutes one of the most important attempts of this kind made by a Muslim physician in India.

^Φ* I would like to thank Owen Cornwall and Peyvand Firouzeh for their reading of this text. Fabrizio Speziale, Université Sorbonne Nouvelle – Paris 3, 13 rue Santeuil, 75005, Paris, France, fabrizio.speziale@univ-paris3.fr.

Nāgawrī's audacious proposal addresses a key question, since the classification of humours constitutes a central element of the doctrinal identities of both the Avicennian and the Ayurvedic schools.

The fundamental concepts and terms of Avicennian humoral theory are often seen as static and a-historical entities whose meanings were defined and fixed once and for all in the classical sources. As Muslim physicians assimilated them from Hellenistic culture, they were thus the product of a first translation. However, their conceptualization has been assumed to have remained essentially unchanged and unquestioned throughout the history of the school. In another study of the way in which the Ayurvedic theory of the *tridoṣa* was rendered in the Persian works written in India, I have shown that Muslim physicians presented the *doṣa* as categories analogous to the *aḥlāṭ* (sing. *ḥilt*), the “humours” of the Avicennian tradition and used almost always the Arabic-Persian equivalent terms to translate the three *doṣa*, instead of borrowing the Sanskrit terms. In late medieval and early modern India, Muslim scholars used these Arabic-Persian terms and concepts as polysemic categories to which new conceptual values could be assigned in order to interpret the non-Muslim humoral thought and to adapt the Muslim concepts to the local context.¹ Writing on the others' doctrine involves also defining and defending their [p. 516] own perspective. Thus several Indian Muslim authors writing on Ayurvedic medicine are concerned with how to interpret the main conceptual differences between the two schools, especially the number of elements and humours.² Muslim physicians' approaches to these problematic points were different. Nāgawrī's unusual proposal tries to accommodate the differences by reconsidering the place assigned to some elements of the theory.

Nāgawrī's proposal must be understood in the specific cultural and historical context in which it was made. Starting from the 14th century a number of Persian texts dealing with Ayurvedic medicine were

¹ See Speziale, “The Persian translation of the *tridoṣa*: Lexical analogies and conceptual incongruities”, *Asiatische Studien*, 68, 3, 2014, pp. 783-796. On the question of the translation of *doṣa* as “humour” see especially Francis Zimmermann, “Terminological problems in the process of editing and translating Sanskrit medical texts.” In Paul U. Unschuld, ed., *Approaches to Traditional Chinese Medical Literature* (Dordrecht: Kluwer, 1989), 141-151; and the discussion by Dominik Wujastyk who points out that “The problem arises not primarily from the ancient texts, but from the modern revisionist tendencies in the interpretation of āyurveda”, Dominik Wujastyk. *The Roots of Ayurveda: Selections from Sanskrit Medical Writings* (New Delhi: Penguin Books India, 1998), 32.

² Table A illustrates the different classifications of the humours of the two schools.

written in South Asia and this trend of studies lasted until the 19th century.³ Nāgawrī's treatise is among the early Persian works describing Ayurvedic materials after the *Majmū'a-yi Šamsī* of Ḥwāja Šams Mustawfī and the *Majmū'a-yi Žiyā'* of Mustawfī's nephew Žiyā' Muḥammad Umar Ġaznawī who lived during the reign of Muḥammad ibn Tuġluq (r. 1325-1351).⁴ Certain Persian texts present the study of the Ayurvedic materials as an inevitable option on the basis of a 'temperamental' and 'climatic' type of interpretation. This question is clearly raised in a very influential work of this kind, the *Ma'dan al-šifā-yi Sikandar-šāhī* (of 918/1512), a Persian treatise on Ayurveda assembled by Miyān Bhuwa ibn Ḥawāšš Ḥān. At the beginning of the passage explaining the reasons for writing the book he declares that: "It is known on the basis of experience (*ba-ḥisab-i tajārib*) that the Greek knowledge (*ḥikmat-i yūnān*) is not appropriate (*munāsib*) to relieve the temperaments of people of India and it does not agree (*muwāfiq*) with the climate (*āb wa hawā*) of this country."⁵ In this view, the state of the humours and the human temperament is influenced by the climatic and geographical conditions and this explained why the therapeutic knowledge of the Muslim scholars was not always effective in India.

[p. 517] Air was important both as an external atmospheric element and as an internal substance of the body. The Ayurvedic concept of *vāta* (wind, air) was the element of the doctrine of the *tridoṣa* that raised the most significant discussions among Indian Muslim physicians who translated it by using the equivalent Persian term of *bād* (air, wind). It is important to consider the asymmetric role occupied by this element in the two cultures. Among the three *doṣa* of the Ayurvedic doctrine, *vāta* is the most important vital principle and plays a central role in the etiology of diseases. Instead it is the only humoral principle of the *tridoṣa*

³ On the Persian studies of Ayurvedic medicine during the Mughal period see Fabrizio Speziale, "Les traités persans sur les sciences indiennes : médecine, zoologie, alchimie." In Hermann, Denis and Speziale, Fabrizio, eds., *Muslim Cultures in the Indo-Iranian World during the Early-Modern and Modern Periods* (Berlin: Institut Français de Recherche en Iran - Klaus Schwarz Verlag, 2010), 403-447.

⁴ On Ḥwāja Šams Mustawfī's *Majmū'a-yi Šamsī* see Fabrizio Speziale, "Majmū'a-yi Šamsī." *Perso-Indica. An Analytical Survey of Persian Works on Indian Learned Traditions*, Speziale, Fabrizio and Ernst, Carl W., eds., 2013. <http://perso-indica.net/work.faces?idsec=8&idw=99>. Accessed 11 June 2014.

⁵ Bhuwa Ḥān, *Ma'dan al-šifā-yi Sikandar-šāhī* (Lucknow: Nawal Kišor, 1294/1877), 3. The *Ma'dan al-šifā-yi Sikandar-šāhī* is a compilation from several Ayurvedic sources which were translated for Miyān Bhuwa who dedicated the work to the sultan Sikandar Lodī (r. 1489-1517).

which, at least on a lexical level, is completely absent in the fourfold humoral taxonomy of the Avicennian school which considers it only as an element.

However, different views on this subject were not unknown to the Greco-Arabic tradition. Descriptions of the wind, and in particular its pathogenic role, are found in the treatise *On Airs, Waters, Places* of the Hippocratic corpus. A classification of the humoral pathology - reminiscent of the Indian theory - is found in a well-known passage of the *Timaeus* (86a-84d) of Plato where the philosopher considers three classes of diseases. The third class is divided into three species: the first is that of the disease caused by the air, the second by the phlegm and the third by the bile. Several studies have examined these sources and suggested the existence of a similarity between the theorizations of air given in certain Ancient Greek texts and in Ayurvedic medical thought.⁶

During the Muslim period, the wind (*rīḥ*) is mentioned in some traditions on the humours of the body ascribed to the Shiite imams and especially the sixth imam Ja‘far al-Šādiq (d. 148/765). In one of these traditions, al-Šādiq describes the human constitution as composed of four humours or natures (*ṭabā‘i‘*), four pillars (*da‘ā‘im*) and four basic elements (*arkān*). The four *ṭabā‘i‘* are blood (*dam*), bile (*mirra*), wind (*rīḥ*) and phlegm (*balgam*). The four *arkān* are light, fire, the pneuma (*rūḥ*) and water, while the pillars refer to the intellectual faculties.⁷ It should be noted that this division of the four *ṭabā‘i‘*, which comprises wind and one bile, is similar to the division which was later proposed [p. 518] in South Asia by Šihāb al-Dīn Nāgawrī. In the *al-Risāla al-dahabiyya*, a medical text associated with the imam ‘Alī al-Rizā (d. 203/818), *rīḥ* is mentioned among the humours in a description of the relations between the humours and the parts of the

⁶ See Jean Filliozat, *La doctrine classique de la médecine indienne. Ses origines et ses parallèles grecs* (Paris: Imprimerie nationale, 1949), 196-237 ; Antonella Comba, “La medicina āyurvedica.” In *Cina, India, Americhe. Storia della Scienza Vol. II* (Rome: Istituto della Enciclopedia Italiana, 2001), 836-837.

⁷ Referred to in the *Tuḥaf al-‘uqūl* of al-Ḥarrānī (4th/10th century), see Muḥammad al-Ḥasan Ibn ‘Alī Ḥarrānī, *Tuḥaf al-‘uqūl* (Qumm: al-Našr al-islāmiyya, 1404/1984), p. 354. The same division of the humours is presented in another tradition ascribed to Ja‘far al-Šādiq and referred to by Ibn Šahrāšūb, see Muḥammad ibn ‘Alī Ibn Šahrāšūb, *Manāqib āl Abū Ṭālib* (Qumm, 4 vols, 1379/1960), vol. 4, 259. For a discussion of these Shiite traditions see Fabrizio Speziale, “Introduzione.” In Speziale, Fabrizio and Giurini, Giorgio, eds., *Il trattato aureo sulla medicina attribuito all’imām ‘Alī al-Riḍā* (Palermo: Officina di Studi Medievali, 2009), pp. 40-41.

body.⁸ A Persian paraphrase of this passage from the *al-Risāla al-ḡahabiyya* is included in the chapter on the humours and natures of Nūr al-Dīn Šīrāzī's *ʿIlājāt-i Dārā Šikohī*, a medical encyclopaedia completed in India in 1056/1646-47.⁹ Regarding the medical texts of the Avicennian tradition, Lutz Richter-Bernburg remarks that Ibn Sīnā (d. 428/1037) lists the inner winds in the discussion on pain and its causes, and that Ismāʿīl Jurjānī (d. 531/1136) later adopted this classification.¹⁰ However, *rīḥ* was never integrated into the classification of the humours of the medical texts of the Avicennian school. Moreover, the references to wind found in some Greek and Arabic texts do not seem to be part of the intellectual context in which *vāta* was translated and interpreted in Persian texts. Indian Muslim physicians did not read Plato's *Timaeus*. Beside the brief quotation in Nūr al-Dīn Šīrāzī's work, the Persian texts on Ayurveda do not refer to Jaʿfar al-Sādiq's traditions on the humours.

In the last chapter of the *Šifā al-marāz*, Šihāb al-Dīn Nāgawrī provides some information about himself and his family. He explains the fact that he did not descend from a lineage of physicians and that he was the first in his family to take up the study of medicine. His forefathers belonged to Ghazni, in Afghanistan, and settled at Nagawr, in Rajasthan, during the period of the Ghurid sultan Šihāb al-Dīn Muḡammad (r. 1202-1206) at the dawn of the Delhi sultanate. He writes that his ancestor Muḡammad Mālik was appointed by the sultan as governor (*wālī*) of Nagawr and that he collected the revenues of the lands (*iqṭāʿ*) of this city for seven or eight years. However, at Muḡammad [p. 519] Mālik's death the family lost its status and fell into poverty, at which point his descendants started to practice different professions.¹¹ Šihāb al-Dīn was active in Gujarat, at least for a certain period, where he was associated with the local court. In 794/1392, a few years after the writing of the autobiographical notes in the *Šifā al-marāz*, he wrote a medical

⁸ See Speziale, Fabrizio and Giurini, Giorgio, eds., *Il trattato aureo sulla medicina attribuito all'imām 'Alī al-Riḡā* (Palermo: Officina di Studi Medievali, 2009), 78. On the authorship of the *Risāla al-ḡahabiyya*, see Speziale "Introduzione," 26-34.

⁹ Šīrāzī's work describes also Indian materials and was dedicated to the Mughal prince Dārā Šikoh (d. 1069/1659) who is well-known for his studies of the Hindu traditions. On Šīrāzī's work see Fabrizio Speziale, "The Encounter of Medical Traditions in Nūr al-Dīn Šīrāzī's *ʿIlājāt-i Dārā Šikohī*." *eJournal of Indian Medicine*, III, 2 (2010): 53-67. <http://bjournals.ub.rug.nl/ejim/article/view/429/363>. Accessed 11 June 2014.

¹⁰ Lutz Richter-Bernburg, "Bād." *Encyclopædia Iranica*, vol. 3, 1989, 350-351.

¹¹ Šihāb al-Dīn Nāgawrī, *Šifā al-marāz* (Bombay, 1295/1878-79), p. 97.

treatise in prose, the *Šifā al-Ḥānī*, at the behest of Zafar Ḥān, who some years earlier had been appointed governor of the province of Gujarat at its capital in Patan.¹²

The *Šifā al-marāz* (Healing of disease) was written in 790/1388 and became widely known as *Ṭibb-i Šihābī* (Medicine of Šihāb) after the author's name.¹³ It is a handbook divided into more than one hundred and sixty short chapters (*bāb*), covering many medical topics, beginning from pathology and treatment of diseases.¹⁴ In addition to the account of the doctrine of the *tridoṣa* given in the first *bāb*, the text includes other descriptions of Ayurvedic materials. The second chapter is dedicated to the classification of tastes (*maza*), a common topic of Ayurvedic texts. However, at the beginning of the chapter Nāgawrī writes that the Indian and Greek scholars consider nine tastes, which is rather the opinion of the latter because the first group considers six tastes.¹⁵

Chapter one hundred and twenty - "on fevers" - refers the view of the Ayurvedic physicians which enumerate thirty kinds of fevers. The author does not list the thirty kinds, but rather advises the reader to refer to another work, called *Ṭibb-i Šamsī*, which is certainly the *Majmū'a-yi Šamsī* by Ḥwāja Šams Mustawfī, an earlier Persian text on Ayurvedic medicine which is no longer extant.¹⁶ Nāgawrī devotes chapter one hundred and twenty five to the [p. 520] diagnosis of the pulse (*nabz*) according to the Ayurvedic physicians.¹⁷ Moreover, in several chapters he refers to the Indian names of simple drugs and diseases,¹⁸

¹² Zafar Ḥān, appointed governor by the Tuḡluq, declares later on his independence from Delhi and establishes an independent sultanate in Gujarat. He reigned between 1407 and 1411 under the name of Muẓaffar Šāh.

¹³ Farooqi has outlined some aspects of this work, though he has not considered in particular the first chapter and its theoretical aspects, see A. H. Farooqi, "Ṭibb-i Shahābī. A Rare Medical Treatises of the Tughlaq Period." *Studies in History of Medicine and Science*, IX, 1-2 (1985): 35-42.

¹⁴ The number of chapters varies between one hundred sixty and one hundred sixty five, depending on the different manuscript and lithograph copies. Copyist errors and variations are found in the texts of both manuscript and lithograph copies.

¹⁵ On the classification of the tastes in *Aṣṭāṅgahrdayasaṃhitā* and *Carakasāṃhitā*, see Claus Vogel, *Vāgbhaṭa's Aṣṭāṅgahrdayasaṃhitā. The first Five Chapters of its Tibetan Version. Edited and Rendered into English along with the Original Sanskrit* (Wiesbaden, 1965), 57-58.

¹⁶ Šihāb al-Dīn Nāgawrī, *Šifā al-marāz* (Bombay, 1295/1878-79), 61.

¹⁷ Šihāb al-Dīn Nāgawrī, *Šifā al-marāz* (Bombay, 1295/1878-79), 64.

which constitute two main fields of Muslim scholars' studies of local medical lexicons. Nāgawrī does not refer directly to Sanskrit sources while discussing Ayurvedic materials but only to the text of Šams Mustawfī. However, in the last chapter, he offers a clear account of his eclectic medical education explaining that he studied with a Muslim teacher, a certain Muḥammad, but later on he also frequented the yogis (*ḥidmat-i jūgyān*) to gain knowledge of medicine.¹⁹

The first *bāb* of the text analyses the causes of the diseases of the body (*asbāb-i amrāz-i badanī*). Here the author proposes a new fourfold division of humoral pathology, which includes the following principles: bile (*talḥa*), wind (*bād*), phlegm (*balḡam*) and blood (*ḥūn*). In this classification, the bile occupies only one place, as in the Ayurvedic tradition, while wind takes the place which becomes free after the suppression of one bile (see Table A). Like other Muslim authors Nāgawrī uses the terms *talḥa* and *balḡam* to translate the Ayurvedic notions of *pitta* (bile) and *kapha* (phlegm). Here is how he describes the differences between the doctrines of the Indian Ayurvedic and Persian Avicennian physicians:

According to the Indian physicians, who say that blood is inside the bile, three are the causes (*ālat*) of the diseases of the body [...]

All diseases of men are caused by *bād*, *talḥa* and *balḡam*.²⁰ If one of these three changes and becomes strong (*mazīd*) a disease appears in the body.

But if one of these three things becomes too strong in the body its symptom (*nišān*) is the death of the patient.

According to the view of the Persian physicians the causes of man's diseases are four. They consider blood (*ḥūn*) the fourth of the three already mentioned and they give solid proofs of that.

Remember thus the symptoms (*'alāmāt*) of each one of the four of which I am telling you. *Talḥa* is certainly hot, *bād* is cold, and *balḡam* is like the cold.

¹⁸ See the ones mentioned by Farooqi "Ṭibb-i Shahābī," 39.

¹⁹ Šihāb al-Dīn Nāgawrī, *Šifā al-marāz* (Bombay, 1295/1878-79), 97-98.

²⁰ *Balḡam* in the Rampur manuscript, *Kitābhāna-yi Razā*, pers. 5968. Otherwise « *aḥlāt wa ān* » in other copies, which however is most probably a mistake of transcription because *aḥlāt* (humours) in this context would not make any sense in the Indian doctrine.

[p. 521] The explanation of the differences is followed by the description of the symptoms of the four humours, divided in as many paragraphs, beginning from the two new elements of Nāgawrī's fourfold classification, *talḥa* and *bād*:

The symptoms of *talḥa*. If the disease comes from the bile, hot and dry symptoms appear, the thirst and the pallor, and this trouble should be relieved by the coldness.

The signs of the bile are the speediness of the pulse and the dryness of the tongue and [the patient] is always prone to coldness as a fish that shakes outside the water.

The symptoms of *bād*. Listen now to the symptoms caused by the dominance of the wind. The experts of pathology consider it to be opposed to the bile.

During the meal,²¹ the excess of dryness and roughness of the body occurs in [the] mouth.

[The patient] is affected constantly by sadness (*kāmid*) because of vain thoughts, day and night he complains about the pains in the bones.

The spleen (*supurz*) and the hemorrhoids appear due to the fact that [the wind] is like oil.²²

Some implicit and ambivalent aspects of this explanation need to be clarified. First, the definition of the properties of the bile: when he explains the signs of *talḥa*, the author clearly links this humour to hot and dry symptoms. Therefore it seems that through this term, he is referring to the yellow bile (*ṣafṛā'*) of the Avicennian thought. Moreover, a different option could have been problematic since the author's classification includes the blood, which is already hot and humid. Despite that, in the following paragraph

²¹ *Hūrdan* in the manuscripts of Tehran (Kitābhāna-yi Majlis, 14404), Rampur (Kitābhāna-yi Razā, pers. 5968) and Copenhagen (Det Kongelige Bibliotek, pers. XXIII); *guftan* in the lithographic editions, Šihāb al-Dīn Nāgawrī, *Šifā al-maraz* (Kanpur 1272/1855-6), 5; (Bombay 1295/1878-9), 5.

²² Nāgawrī, *Šifā al-maraz*, Ms. Rampur, Kitābhāna-yi Razā, pers. 5968, ff. 3a-3b; Ms. Copenhagen, Det Kongelige Bibliotek, pers. XXIII, ff. 31b-32a; Ms. Tehran, Kitābhāna-yi Majlis, 14404, ff. 10a-10b; lithographic edition: Šihāb al-Dīn Nāgawrī, *Šifā al-maraz* (Bombay 1295/1878-9), 5-6.

Nāgawrī writes that *talḥa* is the opposite of *bād*, so that it should rather be understood here that *talḥa* is hot and humid, that is to say the qualities attributed to the Ayurvedic bile in the works [p. 522] of other Muslim authors such as Muḥammad Qāsim Firišta (born ca. 978/1570) and Šāh Ahl Allāh (d. 1190/1776).²³

This discrepancy or ambivalence about *talḥa* can be interpreted in different ways. It is possible that the author implies here a shift of the conceptual register: i.e. in the first passage he refers to the *ṣafrā*’ of the Avicennian tradition, while in the second passage he refers to Ayurvedic *pitta*, by playing precisely on the ambivalent value of the term *talḥa*. Otherwise, one may think that Nāgawrī adopts a view similar to that adopted later by Rizā ‘Alī Ḥān, a scholar active in the early 19th century, who considers the Ayurvedic *ṣafrā*’ as being both wet and dry at the same time.²⁴ The uncertainty and ambivalence - intentional or unavoidable - in which Nāgawrī leaves his reader reflects very well the ambivalent aspects of the translation of *pitta* in Persian medical works.²⁵

Regarding *bād*, Nāgawrī associates this humour with the qualities of coldness and dryness. The Ayurvedic sources, such as the *Carakasaṃhitā*, also consider cold and dry among the properties of *vāta*.²⁶ Therefore, it is evident that Nāgawrī is referring to Ayurvedic *bād* and not to the element air of the Avicennian tradition, which is considered a hot and wet substance. Nāgawrī emphasizes the psychopathological effect of the excess of *bād*. The term used here is the Arabic *kāmid*, a synonym of the Persian *andūh* (anxiety, sorrow). In the Avicennian doctrine these types of disorders, such as melancholy,

²³ Firišta, who is chiefly known as a historian, lived in the Deccan and studied with a Hindu teacher, Speziale 2010a, p. 419. Šāh Ahl Allāh was the member of an influential family of Muslim scholars and Naqšbandī Sufis of Delhi where his father ‘Abd al-Raḥīm (d. 1131/1719) established a well-known Islamic madrasa. After ‘Abd al-Raḥīm’s death the madrasa was run by his descendants and counted several physicians among its students, see Fabrizio Speziale, *Soufisme, religion et médecine en Islam indien* (Paris: Karthala, 2010), 60-61.

²⁴ Rizā ‘Alī Ḥān, *Taḍkira al-hind* (Hyderabad, 1353/1935), vol. 1, 12. Rizā ‘Alī Ḥān was employed as a physician of the Princely State of Hyderabad, in the Deccan. He completed the *Taḍkira al-hind*, a treatise on the Indian *materia medica*, on the basis of a first version written in Arabic by his father.

²⁵ See in this regard Speziale, “The Persian translation of the *tridoṣa*: Lexical analogies and conceptual incongruities”, *Asiatische Studien*, 68, 3, 2014.

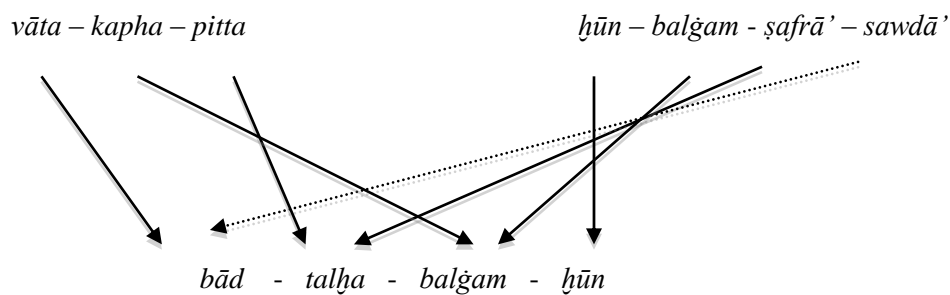
²⁶ See the first chapter of the *Sūtrasthāna* (1.59), and *Carakasaṃhitā*, French translation: *Caraka Saṃhitā. Traité fondamental de la médecine ayurvédique. 1 - Les principes*, tr. by Jean Papin (Paris: Almor, 2006), 52.

were considered the effect of the excess of *sawdā'* that, like Ayurvedic *bād*, is cold and dry. Moreover, the author specifies that *bād* activates the spleen (*supurz*), an organ which in the Avicennian tradition is closely associated with melancholy and black bile.

[p. 523]

Ayurvedic Doctrine

Avicennian Doctrine



Hybrid model by Nāgawrī

Table A. The classification of humoral pathology proposed in the first chapter of the *Šifā al-marāz*

Some elements of this description refer therefore to an implicit but rather clear analogy between the effects of *bād* and those of *sawdā'*. Moreover, the author's statement that the Persian physicians "... consider blood (*ḥūn*) the fourth of the three already mentioned..." makes sense only if *bād* and *sawdā'* are regarded as analogous and interchangeable components.

The last two paragraphs of the first chapter of the *Šifā al-marāz* describe the symptoms of the two other humours of Nāgawrī's classification: *balgam* and *ḥūn*. The definition of their natural qualities represents a less complicated problem for the author. Unlike the case of the bile, the necessary reconfiguration for including *bād* does not modify their place in the fourfold division. The natural qualities

of *balġam* and *hūn* remain the same as those associated with these humours in the Avicennian thought. Nāgawrī's account, therefore, is also less original than his account of the first two humours. The text simply lists some symptoms associated with the manifestation of phlegm and blood. For instance, to explain the nature of *balġam*, Nāgawrī writes that the patient is not inclined toward cold and water, the white colour of the face is also associated [p. 524] with phlegm, whereas among the symptoms of blood is the reddish colour of the urine and the eyes.²⁷

Nonetheless, some less conventional aspects of the role occupied by the natural qualities associated to *balġam* and *hūn* in this model should be noted. When he describes *balġam*, Nāgawrī does not specify whether he is referring to Avicennian phlegm or to Ayurvedic *kapha*. It is, in fact, quite possible that he is referring to both of them, since Muslim physicians classified Ayurvedic *balġam* as a substance of cold and wet nature, such as the Avicennian one.²⁸ In the last paragraph, on the symptoms of *hūn*, Nāgawrī further stresses the association between blood and *talġa* by explaining that the excess (*ziyādat*) of blood is due to the presence of *talġa* in the body. Therefore, although the place of *balġam* and *hūn* is not affected by the new configuration, the dyadic natural qualities used to define them are categories that can also define different humoral entities from those of the Avicennian sources.

On a formal level, Nāgawrī presents his conceptual revision with some caution. He does not propose the new model in a chapter on the constitution of the body or on the nature of the humours, but in the chapter on etiology of disease. The difference may seem subtle, but it is quite significant. To be precise, the goal is not to challenge or deny the foundations of the Avicennian paradigm but rather to update its view of pathology to the new physical and cultural context. Nevertheless, the conceptual reform proposed by Nāgawrī is considerable. In other Persian texts on Ayurvedic medicine, such as those by Firišta, Šāh Ahl Allāh and Rizā 'Alī Ḥān, the interpretation of *bād* is confined to the descriptive approach of the object of the

²⁷ Nāgawrī, *Šifā al-maraz*, Ms. Rampur, Kitābhāna-yi Razā, pers. 5968, f. 3b; Ms. Copenhagen, Det Kongelige Bibliotek, pers. XXIII, ff. 32a-b; Ms. Tehran, Kitābhāna-yi Majlis, 14404, f. 10b; lithographic edition: Šihāb al-Dīn Nāgawrī, *Šifā al-maraz* (Bombay 1295/1878-9), 6. In the Rampur manuscript the order of the last two chapters is inverted.

²⁸ See Speziale, "The Persian translation of the *tridoṣa*: Lexical analogies and conceptual incongruities", *Asiatische Studien*, 68, 3, 2014.

translation. Although the description is intended to expand the knowledge of Muslim physicians it does not aim to reconsider the classification of Avicennian medicine. On the contrary, in Nāgawrī's model, the integration of the two Ayurvedic principles, wind and the existence of a single bile, reconfigures the classical nosography inherited from Hellenistic culture in order to adapt it to the Indian environment. Thus, the wind is extracted from the threefold view of Ayurveda and is relocated in the fourfold division of the Avicennian school. At the same time, Nāgawrī's proposal does not seem to go in the direction of a further integration of Ayurvedic pneumatic [p. 525] physiology since it does not mention the different types of *vāta* contemplated by the Hindu physicians.

Moreover, we must also consider whether the intent of Nāgawrī's classification was twofold, i.e. to revise both doctrines at the base of his hybrid nosography. His model can be read not only as a suggestion to adjust the Avicennian view, but also as a proposal intended to revise the view of the Ayurvedic physicians who do not count blood among the humours. The author's view about *hūn* is very clear in his classification: blood must be considered a humour and the Muslim physicians "...give solid proofs" (*bedānd ilzāmišān rā matīn*) about that. The dual perspective is a quite plausible interpretation considering that the author does not directly declare either his intention to amend the Avicennian view. Of course, an aim of this kind could have been difficult to articulate. And at the same time, it was also unnecessary considering that the new proposed classification fairly explicitly reflects this intention. The dual perspective is also consistent with the form in which the discourse is structured by the author: a preamble presenting (i) the Ayurvedic view, and (ii) the Greek-Arabic one, followed by (iii) the main text of the chapter (divided into four short paragraphs) which proposes the synthesis of the two doctrines.

At the same time, we must consider whether the perspective associating blood to the humours was completely absent in Ayurvedic thought, where blood (*rakta*) is usually considered an element of the body and not one of the humours. Jan Meulenbeld, in an article examining the role of blood in Ayurvedic thought, observes that actually in some sources blood is described through some intermediate characteristics between those of a humour (*doṣa*) and those of an element (*dhātu*). This oscillating identity between the two categories is linked in particular to the role played by the blood as an etiological factor. On the other hand,

the *Hārītasamhitā* attributed to Hārīta, a text probably composed after the arrival of Muslims in India,²⁹ explicitly attributes to blood the characteristics of a *doṣa*.³⁰

These differences of opinion did not remain unnoticed by Muslim scholars. The Persian translation of Vāgbhaṭa's *Aṣṭāṅgahrdayasamhitā*, one of the major classical works of the Ayurvedic tradition, was written less than a century after the composition of the *Śifā al-marāz*. This Persian adaptation was made by [p. 526] 'Alī Muḥammad ibn Ismā'il Aṣawālī Aṣīlī at the request of sultan Maḥmud Begrā (r. 1458-1511) of Gujarat and was titled *Ṭibb-i šifā'-i Maḥmūd-šāhī*. The translator renders the passage (1.6) on the definition of the three *doṣa* given in the first section (*sūtrasthāna*) of the text in the following manner: "You should know that there are three kinds of *aḥlāṭ* (humours): wind (*bād*), bile (*talḥa*) and phlegm (*balḡam*), while according to some there is also a fourth kind, which is blood."³¹ The idea that some regarded blood as a humour of course is not present in the Sanskrit text and is an addition made by the translator. The description of the theory of the *tridoṣa* given by Riẓā 'Alī Ḥān in the *Taḍkira al-hind*, offers another clear account of that. In the paragraph on the humours (*aḥlāṭ*), he writes that the view of blood as the fourth humour was an existing opinion although it was not sustained by the majority of the Ayurvedic physicians:

The constitution of the body and the health and the corruption of the *dhātus*³² are based on the three humours: wind (*bād*), phlegm (*balḡam*) and bile (*ṣafrā'*). Some say that are four and include blood among the *aḥlāṭ*. Several argue that blood is the spirit (*rūḥ*). The most numerous of them think that blood is an element (*juz'*) of the body such as flesh.³³

²⁹ See Comba "La medicina āyurvedica," 844.

³⁰ Jan G. Meulenbeld, "The constraints of theory in the evolution of nosological classification. A study on the position of blood in Indian medicine (Ayurveda)." In Jan G. Meulenbeld, ed., *Medical Literature from India, Sri Lanka, and Tibet* (Leiden – New York: Brill, 1991), 91-103.

³¹ 'Alī Muḥammad ibn Ismā'il Aṣawālī Aṣīlī, *Ṭibb-i šifā'-i Maḥmūd-šāhī*, Ms. Hyderabad, Andhra Pradesh Oriental Manuscript Library and Research Institute, *ṭibb* 181, f. 1b. For the original Sanskrit text see Vāgbhaṭa, *Aṣṭāṅga Hrdaya* (New Delhi: Sri Satguru Publications, 1999), vol. 1, p. 2.

³² According to Ayurvedic medicine, the seven *dhātu* are chyle, blood, muscles, fat, bones, marrow and semen.

³³ Riẓā 'Alī Ḥān, *Taḍkira al-hind*, vol. 1, 11.

Seen from this perspective, Nāgawrī's proposal seems less surprising and inadmissible from the point of view of Ayurvedic thought. It remains to be seen if Nāgawrī's proposal has some impact on the following authors and texts and if this type of view, which regards *bād* as a humour, raised critical reactions among Muslim physicians. Given the large gaps existing in the research on the Persian scientific literature of South Asia it is not possible to offer here a definitive answer to this question. However, certain sources indicate quite clearly that Indian Muslim physicians continue to discuss these types of issues. First of all, we should consider that the *Šifā al-marāz* was a work, which had a wide circulation among later scholars. It was copied many times in manuscript form and then it was printed twice during the 19th century.³⁴ It [p. 527] was certainly read and used as well by some Hindu scholars, as is shown by a manuscript copy made in 1133/1720 by a certain Chanpa, son of another Hindu physician of Bijapur.³⁵ We can therefore assume that Nāgawrī's proposal did not pass unobserved among his colleagues. However, it does not appear that this hybrid view of nosography, contemplating *bād* and one bile, becomes a new leading paradigm, able to supplant the classic conception of Avicennian thought.

Nevertheless, some Indian scholars integrate the model of the *Šifā al-marāz* in their works. Šayḥ Ḥasan Muqarrab Ḥān (d. 1056/1646) adopts Nāgawrī's classification in his *'Ain al-šifā* a text mainly dedicated to pathology and treatment of diseases. Muqarrab Ḥān was a nobleman and served as the governor of several Mughal provinces during the reign of Jahāngīr (1605-1627).³⁶ His father was Šayḥ Bīnā ibn Ḥasan a physician who treated the Mughal emperor Akbar (r. 1556-1605) and wrote the *Ḥulāṣa-yi Bīnā* a medical work discussing Ayurvedic materials. The description of the symptoms of *talḥa* and *bād* given in the third chapter of the *'Ain al-šifā*, on the principles of pathology (*dānistan-i aḥwāl-i marīz*), is similar to that of the *Šifā al-marāz* although Muqarrab Ḥān adds a few more elements, such as jaundice among the disorders

³⁴ Lithographic editions were published in Kanpur in 1272/1855-56 and in Bombay in 1295/1878-79. On the manuscripts copies of the *Šifā al-marāz* see Aḥmad Munzawī, *Fihristwāra-i kitābhā-yi fārsī* (Tehran, 1382 š./2003.), pp. 3519-3521. Nāgawrī's work is also mentioned in the bibliography of Nūr al-Dīn Šīrāzī's *'Ilājāt-i Dārā Šikohī*.

³⁵ See Hukk, Mohammed Ashraful, Hermann Ethé and Edward Robertson. *A descriptive Catalogue of the Arabic and Persian Manuscripts in Edinburgh University Library* (Hertford, 1925), 218.

³⁶ See Syed Ali Nadeem Rezavi, "An Aristocratic Surgeon of Mughal India: Muqarrab Khān." In Irfān Habib, ed., *Medieval India 1. Researches in the History of India 1200-1750* (Delhi: Oxford University Press, 2004), 154-167.

provoked by *bād*.³⁷ The influence of Nāgawrī’s work is also evident in the *Ṭibb-i Gōpāl-šāhī* which adopts the same classification. This is an undated work in verse by an Indian author who calls himself Gopal in the text. The description of *talḥa* and *bād* paraphrases explicitly Nāgawrī’s text. In the title of the first chapter of his book, Gopal also quotes implicitly Nāgawrī’s work. However, in the rest of the chapter he rather ascribes the authorship of the text to himself.³⁸

[p. 528] Another attempt to clarify the nature and function of *bād* is found in the *Mīzān al-ṭibb* of Muḥammad Akbar Arzānī (d. 1134/1722 ca), a text written in the early eighteenth century. Akbar Arzānī was a prominent medical writer and a devotee of the Qādirī Sufi order.³⁹ Some of his texts were included in the curriculum of certain Indian madrasas and were also read by Hindu scholars. Like the *Šifā al-marāz*, the *Mīzān al-ṭibb* was not a treatise on Ayurvedic medicine. It is a medical and therapeutic handbook of didactic character. Arzānī addresses the issue in the first *maqāla* of the book, on the properties of the four natural qualities and humours of Avicennian medicine:

The humours are four: *ḥūn*, *balḡam*, *ṣafrā’* and *sawdā’*. The constitution of the body is based on them and most diseases depend on their excess or deficiency [...] *Bād* is a cold vapour (*duḥān*) generated by the humours and is produced mainly by *balḡam* and *sawdā’*. However, it does not take part in the body’s constitution (*qawām-i badan*), unlike the *arwāḥ*. Although [*rūḥ*] is also generated by the vapour (*buḥār*) of the humours, it is the preceptor of the body (*murabbī-i badan*) and [the principle] on which relies the permanence of the bodily life.⁴⁰

³⁷ Muqarrab Ḥān, *‘Ain al-šifā*, Ms. Hyderabad, Andhra Pradesh Oriental Manuscript Library and Research Institute, 354, ff. 5a-5b.

³⁸ For instance he writes “*‘Alāmāt-i talḥa šinū az Gōpāl*”, that is “hear from Gōpāl the symptoms of *talḥa*”, Gōpāl, *Ṭibb-i Gōpāl-šāhī*, Ms. Hyderabad, Salar Jung Library, pers. *ṭibb* 160, f. 3a.

³⁹ On him see Fabrizio Speziale “Arzānī, Moḥammad Akbar.” *Encyclopaedia Iranica*, E. Yarshater, ed., 2011. <http://www.iranicaonline.org/articles/mohammad-akbar-arzani>. Accessed 11 June 2014. Among his minor works is the *Ṭibb-i hindī*, a collection of prescriptions.

⁴⁰ Muḥammad Akbar Arzānī, *Mīzān al-ṭibb* (Kanpur, 1268/1851), 3.

Arzānī’s position is much more cautious than that of Nāgawrī. Arzānī accepts the existence of *bād* and he specifies the nature of this substance. However, like Firišta,⁴¹ he considers *bād* as a secondary product of other humours. Moreover, Arzānī’s discourse aims to avoid any analogy between *bād* and *rūḥ* (pl. *arwāḥ*), i.e. the “spirit” of Avicennian tradition. One relevant question is whether Arzānī’s discourse can be seen as a reply to the opinion of some scholars that extended the conceptual value of *bād* and interpreted it as a vital principle similar to *rūḥ*, thus proposing an analogy between *vāta* and Avicennian *rūḥ*. The possibility that such interpretation existed would not be too surprising, although until today we have not come across Persian medical texts sustaining this analogy.

[p. 529]

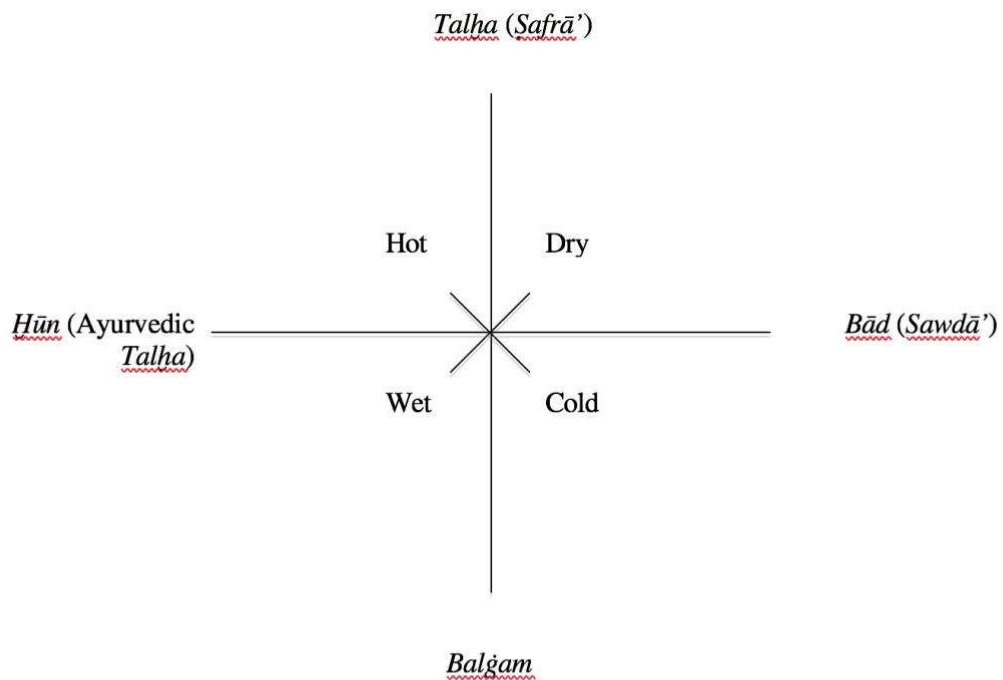


Table B. A reconstruction of the ambivalent relations between the humours and the four natural qualities of the Avicennian thought, based on Nāgawrī’s description. The Ayurvedic *bād* is closely associated with *sawdā’* since they share the same properties, cold and dry. At one instance *talḥa* is described as hot and dry, i.e. equivalent to Avicennian *safrā’*, while in another passage *talḥa* can be understood as referring to Ayurvedic bile that Muslim physicians interpreted as hot and wet, which were also the qualities associated with blood.

⁴¹ Firišta, *Dastūr al-aṭibbā’*, Ms. Copenhagen, Det Kongelige Bibliotek, pers. XXII, f. 4b.

In conclusion, Persian texts offer several descriptions and commentaries on the nature and properties of *bād*, the most important principle of Ayurvedic physiological and pathological thought. The attempts to define this principle produced non-uniform interpretations. The translation of the *vāta* of the Ayurvedic doctrine into the *bād* of the Persian scientific lexicon involves a redefinition of the normative conceptual field of the Persian technical term since it excludes all equivalence between the Ayurvedic *bād* and the element *bād* of Avicennian doctrine. In addition, the interpretation of *bād* as a humour demonstrates similarities with the nature of *sawdā'* of the Avicennian tradition. Considering the analogy and the possible substitution between *bād* and *sawdā'* and between *talḥa* and *ṣafrā'*, one can notice that *mutatis mutandis* Nāgawrī's proposal does not radically transform the normative configuration of the relations between the humours and the four natural qualities of the Avicennian thought (see Table B).

The majority of the descriptions of *bād* are given in the Persian texts on Ayurvedic medicine, while some interpretations are given in other Persian [p. 530] works that reveal the development of this debate beyond the specific texts on Ayurveda. In the second half of the fourteenth century, before the appearance of the major Persian treatises on Ayurvedic medicine, such as the *Ma'dan al-ṣifā-yi Sikandar-šāhī*, Šihāb al-Dīn Nāgawrī proposes to incorporate *bād* into a new fourfold classification of humoral pathology. Nāgawrī's conceptual reform can be read according to two non-mutually exclusive viewpoints. On one level, Nāgawrī's primary intention seems to be to renovate and update the old Hellenistic view in the new natural and intellectual context of South Asia. At the same time, it is also quite possible that through his proposal he aimed to extend the vision of Ayurvedic *tridoṣa* to the fourth humour. If we take into account the polysemy of *talḥa* and the analogy between the natural qualities of *ḥūn* and those attributed to Ayurvedic *talḥa*, Nāgawrī's classification may be seen as a unified model capable of representing the revised forms of both doctrines.

During Nāgawrī's epoch his proposal, conveyed in a Persian text, probably did not circulate significantly among Ayurvedic physicians. However, this condition changed during the Mughal period (1526-1857), which saw the formation of a broad class of Hindu scholars who knew Persian.⁴² In this

⁴² See Muzaffar Alam and Sanjay Subrahmanyam, "The Making of a *Munshī*." *Comparative Studies of South Asia, Africa and the Middle East*, 24/2 (2004): 61–72; Razaullah Ansari "Hindus' Scientific Contributions in Indo-Persian." *Indian Journal of History of Science*, 40, 2 (2005): 205–221; Rajeev Kinra, "Secretary-Poets in Mughal India and the

respect, it should be pointed out that one of the works that incorporates Nāgawrī's proposal is the Persian text of a Hindu scholar, probably written around the late Mughal period. This association of *bād* with the humours already had some precedents in the Greco-Arabic traditions, and later, several Muslim scholars in South Asia discussed the properties and the role of this principle. However, the Persian works of Indian Muslim physicians were not always receptive to the change of perspective proposed by Nāgawrī and adopted by some other works after him. The approach of other Muslim scholars, and especially the authors of the most influential treatises on Ayurveda, indicates that the two conceptual models, the Avicennian and the Ayurvedic, coexisted in the Persian textual culture of South Asia, without leading to a general effort to combine them.

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Bibliography

‘Alī Muḥammad ibn Ismā‘il Aṣawālī Aṣlī, *Ṭibb-i šifā’-i Maḥmūd-šāhī*, Ms. Hyderabad, Andhra Pradesh Oriental Manuscript Library and Research Institute, *ṭibb* 181.

Alam, Muzaffar and Subrahmanyam, Sanjay: “The *Making of a Munshī*.” *Comparative Studies of South Asia, Africa and the Middle East*, 24/2 (2004): 61–72.

Ansari, S. M. Razaullah, “Hindus’ Scientific Contributions in Indo-Persian.” *Indian Journal of History of Science*, 40, 2 (2005): 205–221.

Arzānī, Muḥammad Akbar. *Mīzān al-ṭibb*. Kanpur, 1268/1851.

Ethos of Persian: The Case of Chandar Bhan ‘Brahman’”, PhD, University of Chicago, Department of South Asian Languages and Civilizations, 2008.

Bhuwa Ḥān, Miyān ibn Ḥakīm Ḥawāṣṣ Ḥān. *Ma'dan al-šifā-yi Sikandar-šāhī*. Lucknow: Nawal Kišor, 1294/1877.

Carakasamhitā, French translation: *Caraka Samhitā. Traité fondamental de la médecine ayurvédique. I - Les principes*, tr. by Jean Papin, Paris: Alhora, 2006.

Comba, Antonella. "La medicina āyurvedica." In *Cina, India, Americhe. Storia della Scienza Vol. II*. Rome: Istituto della Enciclopedia Italiana, 2001, 832-856.

Farooqi, A. H., "Ṭibb-i Shahābī. A Rare Medical Treatises of the Tughlaq Period." *Studies in History of Medicine and Science*, IX, 1-2 (1985): 35-42.

Filliozat, Jean. *La doctrine classique de la médecine indienne. Ses origines et ses parallèles grecs*. Paris: Imprimerie nationale, 1949.

Firišta, Muḥammad Qāsim, *Dastūr al-aṭibbā'*, Ms. Copenhagen, Det Kongelige Bibliotek, pers. XXII.

Gōpāl, *Ṭibb-i Gōpāl-šāhī*, Ms. Hyderabad, Salar Jung Library, pers. *ṭibb* 160.

Ḥarrānī, Muḥammad al-Ḥasan Ibn 'Alī. *Tuḥaf al-'uqūl*. Qumm: al-Našr al-islāmiyya, 1404/1984.

Hukk, Mohammed Ashraful, Hermann Ethé and Edward Robertson. *A descriptive Catalogue of the Arabic and Persian Manuscripts in Edinburgh University Library*. Hertford, 1925.

Ibn Šahrāšūb, Muḥammad ibn 'Alī. *Manāqib āl Abū Ṭālib*, Qumm, 4 vols, 1379/1960.

Kinra, Rajeev. “Secretary-Poets in Mughal India and the Ethos of Persian: The Case of Chandar Bhan ‘Brahman’”, PhD, University of Chicago, Department of South Asian Languages and Civilizations, 2008.

Mazars Guy. *La médecine indienne*. Paris: Presses Universitaires de France, 1995.

Meulenbeld, Jan G. “The constraints of theory in the evolution of nosological classification. A study on the position of blood in Indian medicine (Ayurveda).” In Jan G. Meulenbeld, ed., *Medical Literature from India, Sri Lanka, and Tibet*. Leiden – New York: Brill, 1991, 91-103.

Munzawī, Aḥmad. *Fihristwāra-i kitābhā-yi fārsī*. Tehran, vol. 5, 1382 š./2003.

Muqarrab Ḥān, *‘Ain al-šifā*, Ms. Hyderabad, Andhra Pradesh Oriental Manuscript Library and Research Institute, 354.

Nāgawrī, Šihāb al-Dīn, *Šifā al-marāz*, Ms. Rampur, Kitābhāna-yi Rażā, pers. 5968; Ms. Copenhagen, Det Kongelige Bibliotek, pers. XXIII; Ms. Tehran, Kitābhāna-yi Majlis, 14404; Editions: Kanpur 1272/1855-56 ; Bombay 1295/1878-79.

[p. 532]

Rezavi, Syed Ali Nadeem. “An Aristocratic Surgeon of Mughal India: Muqarrab Khān.” In Irfan Habib, ed., *Medieval India I. Researches in the History of India 1200-1750*. Delhi: Oxford University Press, 2004, 154-167 (1st ed. 1992).

Richter-Bernburg, Lutz. “Bād.” *Encyclopædia Iranica*, vol. 3, 1989, 350-351.

Rizā ‘Alī Ḥān. *Taḍkira al-hind*. Hyderabad, 2 vols., 1353/1935.

Speziale, Fabrizio, “Introduzione.” In Speziale, Fabrizio and Giurini, Giorgio, eds., *Il trattato aureo sulla medicina attribuito all’imām ‘Alī al-Riḍā*. Palermo: Officina di Studi Medievali, 2009, 9-58.

- “The Encounter of Medical Traditions in Nūr al-Dīn Šīrāzī’s *‘Ilājāt-i Dārā Šikōhī*.” *eJournal of Indian Medicine*, III, 2 (2010): 53-67.
<http://bjournals.ub.rug.nl/ejim/article/view/429/363>. Accessed 11 June 2014.

- “*Les traités persans sur les sciences indiennes : médecine, zoologie, alchimie*.” In Hermann, Denis and Speziale, Fabrizio, eds., *Muslim Cultures in the Indo-Iranian World during the Early-Modern and Modern Periods*. Berlin: Institut Français de Recherche en Iran - Klaus Schwarz Verlag, 2010, 403-447.

- *Soufisme, religion et médecine en Islam indien*. Paris: Karthala, 2010.

- “Arzāni, Moḥammad Akbar.” *Encyclopaedia Iranica*, E. Yarshater, ed., 2011.
<http://www.iranicaonline.org/articles/mohammad-akbar-arzani>. Accessed 11 June 2014.

- “Majmū‘a-yi Šamsī.” *Perso-Indica. An Analytical Survey of Persian Works on Indian Learned Traditions*, Speziale, Fabrizio and Ernst, Carl W., eds., 2013. <http://perso-indica.net/work.faces?idsec=8&idw=99>. Accessed 11 June 2014.

- “The Persian translation of the *tridoṣa*: Lexical analogies and conceptual incongruities”, *Asiatische Studien*, 68, 3, 2014, pp. 783-796.

Speziale, Fabrizio and Giurini, Giorgio, eds., *Il trattato aureo sulla medicina attribuito all'imām 'Alī al-Riḍā*. Palermo: Officina di Studi Medievali, 2009.

Vāgbhaṭa. *Aṣṭāṅga Hṛdaya*, 3 vols., Text and English translation by a board of scholars. New Delhi: Sri Satguru Publications, 1999.

Vogel, Claus. *Vāgbhaṭa's Aṣṭāṅgahṛdayasaṃhitā. The first Five Chapters of its Tibetan Version. Edited and Rendered into English along with the Original Sanskrit*. Wiesbaden, 1965.

Wujastyk, Dominik *The Roots of Ayurveda: Selections from Sanskrit Medical Writings*. New Delhi: Penguin Books India, 1998.

Zimmermann, Francis. "Terminological problems in the process of editing and translating Sanskrit medical texts." In Paul U. Unschuld, ed., *Approaches to Traditional Chinese Medical Literature*. Dordrecht: Kluwer, 1989, 141-151.