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► **To cite this version:**

Fabrizio Speziale. Persian Treatises on Āyurveda: The Shaping of a Genre. *Journal of South Asian Intellectual History*, 2021, 3 (1), pp.89-122. <10.1163/25425552-12340023>. <halshs-03952465>

**HAL Id: halshs-03952465**

**<https://shs.hal.science/halshs-03952465v1>**

Submitted on 19 Jul 2023

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**Persian Treatises on Āyurveda: The Shaping of a Genre**  
*Journal of South Asian Intellectual History*, 3, 2020, pp. 89–122.

Fabrizio Speziale<sup>1</sup>

**Abstract.** This article examines the translation of foreign materials into post-Abbasid Muslim medical culture by looking at the production of Persian works dealing with Ayurvedic medicine. From the 14<sup>th</sup> century onwards, the composition of Persian texts on Āyurveda emerged in South Asia as a new genre of writing, which was actually a composite genre including various kinds of texts. The Muslim physicians incorporate the other's learning not by rejecting the principles of their receiving culture but rather by empirically applying the logic of their principles in understanding the foreign environment and the receiving culture. The composition of new texts on Āyurveda in Persian constitutes a prominent aspect of this engagement as well as a central element of the creation of a Persianised version of Ayurvedic treatment more likely to be circulated among Indian Muslim physicians. The Persian treatises apply new linguistic and cognitive categories to the analysis of the translated material; the interpretation based on the criteria of the receiving culture is added to, and sometimes replaces, the criteria of the source culture.

### 1. Persian Medical Culture and South Asia

This article examines how Ayurvedic materials were translated and integrated into the Persian medical culture of South Asia. It looks at how the production of Persian texts on Ayurvedic medicine emerged in South Asia as a new genre of writing, which was actually a composite genre including various kinds of texts, and, in particular, at how authors writing in Persian combined the materials of the translated sources with the textual forms and conceptual structures of the receiving culture. These phenomena led to the construction of a Persianate version of Ayurvedic treatment which was used, transmitted and updated by Indian Muslim physicians until the Colonial period. One of the main issues raised by these texts deals with the relationship between culture and nature or, more precisely, with how medical culture should be adapted and extended when it is no longer capable of properly understanding and classifying certain features of the natural world. However, the incorporation of the local scientific culture dealing with the natural world does not only concern the knowledge of Indian nature. The appropriation of the other's culture, in fact, redefines certain conceptual categories of the Muslim receiving culture involved in the translation, by giving them new contextual meanings. This is particularly true of knowledge pertaining to the properties of the elements and the humours, which represent one of the key points of convergence of the theories on man and nature.<sup>2</sup>

The translations of Indic materials did not only involve medicine, however. Until the 19<sup>th</sup> century, a large number of Persian studies were written in South Asia on India's religions, philosophy, epics, mysticism, history, sciences, arts, geography, flora, fauna, cuisine, etc.<sup>3</sup> Persian and Urdu studies on Āyurveda constitute one of the most important processes of integration of non-Muslim materials to have been accomplished in Muslim medical culture since the translation of Greek knowledge

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<sup>2</sup> On these issues see Speziale 2014, 2018b.

<sup>3</sup> See Ernst 2003a, Truschke 2016, Speziale 2018a. Among the studies on specific texts and translations see: Ernst 2003b, 2010, 2015, 2016; Franke 2005, 2011; Speziale 2006, 2013, 2015; Truschke 2011; Alam 2012; Keshavmurthy 2013a, 2013b, 2013c; D'Hubert 2013; Alam - d'Hubert 2017; Orthmann 2017; Hakala 2018; Mahmudian - Reichmuth 2020.

into Arabic. However, several factors have contributed to removing this corpus of texts from Colonial and post-Colonial accounts of the history of Muslim and Indian scientific cultures. Contextualising this corpus of texts requires an approach capable of de-westernizing the prevalent reading of the history of the renewal of thought in Early Modern Persian medical culture. This approach must take into account the empirical, rational and critical attitudes towards the heritage of the Greco-Arabic learning that emerged in post-Abbasid culture, and detach the issue from the assumption that the interaction with Western science was the only reason for creating such attitudes in Early Modern Persian culture.

Historians of medicine studying the Muslim world have for a long time cultivated the idea that the Post-Medieval period was an epoch of decline for medical studies, characterized by the development of secondary literature that was nothing more than a copy of the classical Arabic texts, such as Ibn Sīnā's (d. 370/980) *Qānūn fī al-ṭibb*, written before the 13<sup>th</sup> century, which also had great allure in the Latin world. This "ideology of decline" is based on the myth of a "Golden Age" of medicine in the Muslim world, the end of which is supposed to have coincided more or less with the fall of the Abbasid caliphate in the mid-13<sup>th</sup> century.<sup>4</sup> Such a historical characterization is implicit in many studies on the history of medicine in the Muslim world – studies that usually focus on the history of texts written in Arabic up until when Arabic sources were rendered into Latin and absorbed by the European world. Recent studies have rejected the narrative of decline and its chronology, instead registering developments of scientific and philosophical studies in the Post-Classical Muslim world.<sup>5</sup>

At the comparative level, it should be noted that while European scholars were translating and studying Greek sciences and Arabic texts, Muslim authors in South Asia had already begun translating Indian knowledge, and were attempting to integrate it into Persian scientific culture—all of this being additional to their study of the Greco-Arabic sciences. A few years before Jean de Tournemire's death (d. before 1396), the author of a commentary on the section on pathology of the *Liber ad Almansorem (Kitāb al-Mansūrī fī l-ṭibb)* by al-Rāzī, Šihāb al-Dīn Nāgawī had proposed to reformulate the view of Greco-Arabic humoral pathology in order to integrate *vāta* (wind) from Ayurvedic thought.<sup>6</sup> In 1473, the year when the Latin translation of the *Qānūn fī al-ṭibb* by Ibn Sīnā was printed in Milan and Strasbourg,<sup>7</sup> Vāgbhaṭa's *Aṣṭāṅgahṛdayasaṃhitā* was translated from Sanskrit into Persian in Gujarat. Over the course of these same years, during which Andrea Alpago (d. 1521) was in Damascus, where he worked, among other things, on revising the Latin translation of Ibn Sīnā's work, the *Ma'dan al-šifā'-i Sikandar-šāhī*—one of the most influential Persian treatises on Āyurveda—was composed in North India.<sup>8</sup> Shortly

<sup>4</sup> Elgood who mentions many treatises by authors who lived in India, concludes emphatically: "A further consideration arises on this subject of Moghul translations and compositions. This is the pathos of their efforts, the waste of their labours. The System of Medicine [*sic*] upon which they spent hours and hours transcribing and translating was already dying and outdated". Elgood 1970: 88, and also pp. 19, 87; see also Bürgel 1998: 53-54; Weisser 2002.

<sup>5</sup> See, among others, Speziale 2010a: 9-12, 2018a; Joesse - Pormann 2010; Attewell 2007; Ragab 2019; Brentjes 2010; Ahmed 2011, 2013.

<sup>6</sup> Jean de Tournemire taught at the faculty of medicine in Montpellier and was physician at the papal court in Avignon, see Wickersheimer pp. 494-495. On Šihāb al-Dīn Nāgawī's work, the *Šifā' al-marāḏ* (790/1388), see Speziale 2014.

<sup>7</sup> See Klebs 1938: 68.

<sup>8</sup> Andrea Alpago spent thirty years in Damascus, between 1487 and 1517, as physician at the consulate of Venice, and studied with the local physician Ibn al-Makkī (m. 1531). See Levi Della Vida 1960. On

after this, in 1520, the third Persian *Faras-nāma* on Ayurvedic veterinary medicine appears in Gujarat.<sup>9</sup>

Persian translations and commentaries of Arabic texts were also written in South Asia – where the authors focused on Ibn Sīnā’s *Qānūn* and its abridgements. At the same time, texts such as the *Kāmil al-ṣinā’a al-ṭibbiyya* by al-Majūsī (d. 384/994 ca.), the *Kitāb al-Manṣūrī* and the *Kitāb al-ḥāwī* by al-Rāzī (d. 313/925), or the *Kitāb al-kulliyāt* by Ibn Ruṣd (d. 595/1198) were never the objects of remarkable Persian translations in South Asia. The integral versions of certain classical Arabic texts circulated far more widely in their Latin translations than in their Persian versions. The *Kitāb al-ṣaydana* by al-Bīrūnī (d. after 442/1050) had been translated by Abū Bakr al-Kāšānī during the Sultan of Delhi Iltutmīš’s reign (r. 1211-1236). However, after al-Kāšānī there is not even one known integral Persian translation of a classical Arabic medical text made in India during the following period of the Delhi Sultanate (ca. three centuries). It is only beginning in the 16<sup>th</sup> century that translations and commentaries of classical Arabic texts begin to develop in India – most of them concerning the *Qānūn fī l-ṭibb* by Ibn Sīnā and its abridgments. Cyril Elgood attempted to provide an explanation – however improbable – of this tendency of Indian literary production, especially when compared to the texts written in Safavid Iran:

By Safavid times... [v]ery few changes were made or could be made. A few new drugs were added... [i]n consequence the old textbooks were well able to meet the requirements. Had these textbooks been available to the Moghul doctors, I do not think that they would have laboured to write the huge and lengthy volumes that I have just described. But for the most part they were not available. A refugee does not carry with him many heavy books. Only consider the distance between North Persia and Delhi. First there are many miles of rough country or desert to traverse before reaching Herat...<sup>10</sup>

The bibliographies found in Indo-Persian texts, the manuscripts of Arabic texts that were copied or circulated in India, and the medical texts that were included in the curriculum of Indian madrasas – not forgetting the Persian translations of Arabic works made in India – indicate that Muslim physicians in South Asia read and had extensive knowledge of the classical manuals of the Arabic tradition.<sup>11</sup> The fact that these texts could circulate among physicians in their Arabic versions obviously constitutes one of the reasons for the limits of the process of Persian translation of certain Arabic works that were quite well known in the Latin West.

The ideology of decline has also been a central element of the interpretation of the intellectual history of South Asia after the arrival of the Muslims. The Western reconstruction of the history of Asian cultures is closely related, in a variety of forms and contexts, to the writing of the very history of the West and its role in human

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the *Ma’dan al-ṣifā’-i Sikandar-šāhī* see below.

<sup>9</sup> This *Faras-nāma* is a translation of materials from the *Śālihotra* Sanskrit tradition on the horse and its treatment. It is made by Zayn al-‘Abidīn ibn Abū al-Ḥusayn Karbalā’ī Hāšimī for sultan Šams al-Dīn Muẓaffar Šāh II (r. 1511-1526) of Gujarat. Two earlier Persian adaptations of *Śālihotra* materials had been realised by ‘Abd Allāh ibn Šafī for sultan Aḥmad Walī Bahmanī (r. 1422-1435) of Gulbarga and by an anonymous translator for sultan Ġiyāṭ al-Dīn Šāh Ḥalġī (r. 1469-1500) of Malwa, see also *Speziale* 2018a: 209-2013.

<sup>10</sup> Elgood 1970: 87.

<sup>11</sup> Further, they read the major works written in Persian by the physicians of Safavid Iran, such as ‘Imād al-Dīn Maḥmūd Šīrāzī (*fl.* middle of 16th century) and Mīr Mu’min Tunakābunī (*fl.* second half of 17th century).

civilization. The interpretive schemas elaborated by the British during the Colonial period divides Indian history into three phases: the Great Indian civilization, the development of which was interrupted by the Muslims coming to power, hence the period of decadence, followed by the phase of modernization and progress decreed by British colonization.<sup>12</sup> As Thomas Wise wrote in his *Commentary on the Hindu System of Medicine*: “Another cause which produced the neglect of the Hindu Medical Science on the part of the Muhammadan conquerors of Hindustán, is that they were so prepossessed in favor [sic.] of their own system of medicine, as to have little respect for that of a vanquished people.”<sup>13</sup>

The translation of Ayurvedic sources into the languages of Muslim scientific culture is a phenomenon that extends over a millennium. Contacts with the Indian sciences had actually developed fairly early in the Muslim world, and Muslim scholars were already aware of scientific elements of Indian origin well before the establishment of Muslim power in the subcontinent. Caraka, Suśruta and Vāgbhaṭa’s treatises were translated from Sanskrit into Arabic during the Abbasid period thanks to the presence of Indian scholars, principally the two doctors and translators Manka and Ibn Dhan.<sup>14</sup> The main patrons of Indian medicine were a family of Buddhist origin that had converted to Islam, the Barmacides, particularly Yahyā ibn Ḥālid, Caliph Hārūn al-Rašīd’s (r. 786-809) vizier.<sup>15</sup> Nonetheless, the translations made in this period essentially had little impact on later Indo-Persian texts. None of the known Persian works on Āyurveda composed in South Asia seem to be based on the earlier Arabic versions of the Abbasid period. In this regard, it is likely that copies of the translations made by Manka and Ibn Dhan at the end of the 8<sup>th</sup> century were no longer available to Muslim scholars writing in India five centuries later. However, even the section on Indian medicine in ‘Alī ibn Sahl Rabbān al-Ṭabarī’s *Firdaws al-ḥikmat* (850 ca.) was not the object of major Persian translations in South Asia.

The production of Persian texts and translations on Ayurvedic medicine emerged as an established practice in South Asia at the time of the pre-Mughal Sultanates (13<sup>th</sup>-16<sup>th</sup> century), especially from the 14<sup>th</sup> century onwards. This genre of works continued to develop during the Mughal era (1526-1857). In the 18<sup>th</sup> and 19<sup>th</sup> centuries, new works in the genre appeared in the Princely States as well as in the Colonial space, where Persian texts on Indian *materia medica* and other domains of learning were also translated for the British.<sup>16</sup> One feature of these medical texts is that they are not the product of a circumscribed school of thought gathered around a specific group of physicians. Nor does this trend of medical studies constitute a movement bound to the religious-cultural policies or the patronage of a specific Muslim dynasty, although several of these works take the form of treatises dedicated to Muslim kings. Overall, these Persian studies developed as a polycentric and trans-regional phenomenon that emerged in the cities of the medieval Sultanates, continued in the centres of the Mughal Empire and then spread to the Indian Princely States and the domains under British administration. In the field of medicine, it is hence a movement that develops gradually and progressively, over a period of seven centuries and also undergoes a time of stagnation in the transition from the period of the

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<sup>12</sup> Arnold 2000: 3-4.

<sup>13</sup> Wise 1860: iv.

<sup>14</sup> Ibn al-Nadīm 1970, vol. II: 589-590, 710; Sezgin 1970: 187-202.

<sup>15</sup> On the Barmacide’s patronage see in particular Van Bladel 2011. On the Indian materials in the *Kitāb al-ḥāwī* by al-Rāzī, see Kahl 2015: 7-28, 71-159.

<sup>16</sup> On the Persian texts on Indian cultures translated and compiled for the British, see Ernst 2003a: 187-191; Speziale 2010b: 433-435; D’Hubert 2013.

Sultanates to the Early Modern age.<sup>17</sup> The polycentrism and historical and geographical fragmentation of these studies, as well as their ‘peripheral’ position in relation to the rest of the Muslim world, should be seen as some of the factors that have, to date, prevented this corpus of treatises from being considered and studied as a scientific trend in itself.

## 2. Pragmatic and Conceptual Issues

The Muslim physicians’ interest in Ayurvedic knowledge primarily arose from the need to extend their therapeutic knowledge and to hone its efficacy in the South Asian environment. The assimilation of local knowledge into Indo-Persian texts was nourished by cases for which the works by the Greek and Arabic masters did not provide effective solutions. Muslim scholars in South Asia pressed against the bounds of the knowledge transmitted by the texts of the medieval Arabic tradition, especially in the domains of therapeutics and pharmacology. They encountered considerable difficulties in adapting their remedies to local conditions and in identifying and obtaining the substances used in the Arabic and Persian texts. Certain plants were not indigenous to India, and it was therefore necessary to find local substitutes. It is probably not a coincidence that the only known Persian translation of an Arabic pharmacopoeia made under the Sultanate of Delhi, was al-Bīrūnī’s *Kitāb al-ṣaydana*, a treatise on simple remedies that included the Indian names for numerous substances.

The requirement of presenting Indian terminology and identifying the remedies available in the local pharmacopoeia is a topic discussed by various Persian-language works on Ayurvedic medicine. This key issue is raised in the *Ma’dan al-ṣifā’-i Sikandar-šāhī*, an extensive treatise on Ayurvedic medicine compiled by Miyān Bhuwa ibn Ḥawāṣṣ Ḥān who dedicated it to Sultan Sikandar Lodī (r. 1489-1517). The *Ma’dan al-ṣifā’* is the most influential Persian work on Ayurvedic medicine written during the pre-Mughal period, and marks a fundamental transition in the history of Persian studies in this field. In the introduction, Miyān Bhuwa explains that:

Since the names of drugs are in Persian and Greek languages they are hardly identified in this country, while a number of them (*aktar-i ān*) are not present at all. Therefore it has been necessary to study (*tatabbu’*) books of Indian physicians which are a magnetite (*miqnāṭīs*) for the iron of diseases and corruption of temperament.<sup>18</sup>

An account concerning Miyān Ṭāhā Farmulī clearly illustrates the issue of Muslims knowledge of Indian names. Miyān Ṭāhā, a contemporary of Miyān Bhuwa, was a Muslim scholar who had great expertise in medicine and Ayurvedic treatment. The narrative recounts that the son of Ibrāhīm Ḥān Sarwānī, a nobleman of the time, had a wound on his abdomen that would not heal so he was taken to Miyān Ṭāhā. The latter prescribed a treatment that included *gobhī* powder.<sup>19</sup> The servant accompanying the child did not however understand the meaning of the word *gobhī*. Miyān Ṭāhā tried to explain to him what this substance was, mentioning the different names used by villagers, yogis and the Gujaratis, but the servant was unable to understand any of these terms. Finally, Miyān Ṭāhā told him the term used by the Afghans, instructing him to mention it to Ibrāhīm Ḥān who would understand it.<sup>20</sup>

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<sup>17</sup> See Speziale 2018a: 179-180, 184-186.

<sup>18</sup> Bhuwa Ḥān 1294/1877: 3.

<sup>19</sup> Hindi term for the medicinal plant *Elephantopus scaber*.

<sup>20</sup> Muštāqī 1422/2002: 176-77.

Three centuries later, Nāfi‘ al-Şiddīqī al-Jā‘isī explains that he wrote his *Anīs al-aṭibbā‘* because of the difficulties Indian Muslim physicians encountered when using Persian pharmacopoeias such as the *Iḥtiyārāt-i badī‘*, a well-known work by Zayn al-Dīn ‘Alī al-Aṭṭār (d. 806/1403-1404), a physician from Shiraz who was in the service of the Muzaffarid ruler Şāh Şujā‘ (r. 1364-1384).<sup>21</sup> In the *Muntaḥab al-adwiya*, written in 1252/1837 in Hyderabad, Muḥammad Qamar al-Dīn Ḥusayn says that the Persian, Arabic, and Greek names were not used by Indian pharmacists, and therefore, in his work he placed particular emphasis on the description of local remedies, while always using the Urdu nomenclature.<sup>22</sup> Pharmacology was therefore the branch of Indian medicine that elicited the most interest among Muslim scholars practicing in South Asia. The encounter with the rich Indian pharmacopoeia led Muslim doctors to undertake empirical research on local remedies – the results of this research were also manifest in the formulae of their *mujarrabāt*, the “tested remedies,” which were often assembled in compilations. The empirical and lexical research into Indian pharmacology, and the vast integration of Indian pharmacopoeia, remedies and vocabulary into Persian and then Urdu literature were some of the most significant outcomes of these studies.

According to Muslim scholars, the limits of Greco-Arab knowledge and the obligation to adapt their methods to the Indian context were issues that could be clearly explained at the doctrinal level. The ‘temperamental’ and ‘climatic’ explanation provided in the Persian texts also raised the question of a discrepancy between Greco-Arab knowledge and the temperament of bodies in the Indian region. This question is clearly evoked by Miyān Bhuwa in the *Ma‘dan al-şifā‘-i Sikandar-şāhī*, at the beginning of the discourse specifying his reasons for writing the book:

From experience (*ba-ḥisab tajārib*) it is known that Greek knowledge (*ḥikmat-i yūnān*) is not appropriate (*munāsib*) for relieving the temperaments of people in India and it is not congruous (*muwāfiq*) with the climate (*āb wa hawā*) of this country.<sup>23</sup>

Similar remarks are made in the preface to the *Dastūr al-Hunūd* by Amān Allāh Ḥān (17<sup>th</sup> century). Like other Muslim authors of these medical texts, Amān Allāh Ḥān was a devout believer. He thus resituates the question in a determinist but pragmatic framework. According to Amān Allāh, medical expertise must be tailored to each different region, which is a consequence of the way in which God fashioned nature:

Do you not see that the All-Mighty Physician [God] has created remedies (*adwiya*) specific to each country and efficient to treat the symptoms and diseases that are recurrent in this region? Consequently, it is unquestionable that the preservation of the health of temperaments is dependent on the knowledge (*ma‘rifa*) of the temperaments (*ṭabā‘ī*) of the remedies of each country as well as the knowledge of the lexicon of the [local] scholars (*zabān-i ahl-i taḥqīq*).<sup>24</sup>

This approach interprets the incorporation of the foreign knowledge not as a rejection of the principles of the receiving culture but as a rational and empirical application of the logic of these principles as a means to understand features of both

<sup>21</sup> Şiddīqī al-Jā‘isī. *Anīs al-aṭibbā‘*. Ms. Paris, Bibliothèque nationale de France, supplément persan 1088, f. 1r. This dictionary of remedies was written in 1202/1787-88. The author’s name refers to Jā‘is, a village now situated in Uttar Pradesh, about 80 km. East of Lucknow.

<sup>22</sup> Fārūqī 1420/1999: 173-174.

<sup>23</sup> Bhuwa Ḥān 1294/1877: 3.

<sup>24</sup> Amān Allāh. *Dastūr al-Hunūd*. Ms. Hyderabad, Salar Jung Library, pers. *ṭibb* 91, f. 1b.

the foreign environment and the receiving culture. At a conceptual level, these texts justify and encourage the study of Ayurvedic knowledge on the grounds of the same fundamental principles of Greco-Arab thought. Notably, the fact that a remedy must be appropriate to the temperament of a body in a certain region and climate, and that knowledge of these matters is indispensable to a physician's practice. It was therefore a commitment to maintaining consistency with the principles of the discipline that compelled its adaptation and renewal. Conversely, the principles of Greco-Arab doctrine explained the limits of the efficacy of the Muslim physicians' therapeutic knowledge in a different climate like that of India.

The incorporation of Indian knowledge and the adaptation of Persian culture to the local context led to a significant renewal of the knowledge transmitted by Muslim physicians in South Asia. To give one example, the *Qānūn fī l-tibb* of Ibn Sīnā included only one formula for *itrīfal*<sup>25</sup> – the *triphala* of the Ayurvedic tradition – while the *Qarābādīn-i Qādirī* by Arzānī Akbar Arzānī, written in the second decade of the 18th century, included six formulae, and in the 19th century the *Qarābādīn-i A'zam* by Ḥakīm A'zam Ḥān described about twenty different *itrīfal*.<sup>26</sup> The texts composed by Akbar Arzānī and A'zam Ḥān are not monographs on Ayurvedic medicine, consequently they constitute reliable sources to examine the circulation of this type of knowledge in the more general context of the Persianate medical culture of South Asia. The Muslim authors and physicians of the Mughal period were certainly aware of the progress made in the knowledge of pharmacopoeia during their time, particularly in comparison to the texts of the Arabic tradition. This is evident in the fact that most of the Persian commentaries on the *Qānūn fī l-tibb* by Ibn Sīnā, written in South Asia, do not deal with the sections on pharmacology.<sup>27</sup> The renewal of studies inevitably implies the development of a selective approach, even with regard to certain aspects of the classic texts of the Greco-Arab school.

### 3. The Types of Persian Texts on Āyurveda

A closer examination of the types of Persian texts on Āyurveda reveals several features of the main trends and forms of integration of Indian knowledge into Persian medical culture. From a perspective that aims pre-eminently at specifying the method of exposition and the homogeneity of the content, the Persian sources can be roughly divided into three main categories which reflect the different approaches adopted by Muslim scholars. The first category consists of integral or partial translations (*tarjuma*) of Indian sources; the second is the new works on Āyurveda in Persian, which, along with the first category, is comprised of the monographs on this subject; the third consists of the chapters and descriptions included in other Persian texts which are not entirely, or chiefly, devoted to Indian knowledge.

Like all attempts at simplifying complex cultural phenomena, this classification presents an overall coherence that makes it possible to distinguish certain main trends of the phenomenon, but it does not represent a criterion that can be applied in a systematic manner. Some works occupy an intermediate position between these categories, or combine aspects of them. The first category of translations can also be included in the two others. For example, a text like the *Ma'dan al-šifā'* is a compilation of parts of Ayurvedic texts translated into Persian assembled into a treatise of the second type. Several of the new Persian treatises

<sup>25</sup> A compound drug made of myrobalans that the Muslims classified also as a *ma'jūn* (electuary).

<sup>26</sup> Ibn Sīnā, 1417/1996: 23; Arzānī 1277/1860: 3-4; A'zam Ḥān 1996 pp. 2-8.

<sup>27</sup> On the translations of the *Qānūn fī l-tibb*, see the study by Zill al-Raḥmān 1383š./2004.

dealing with Āyurveda—such as Firišta’s *Dastūr al-aṭibbā’* and Darwīš Muḥammad’s *Ṭibb-i Awrang-šāhī*—include references to elements of Muslim culture and, consequently, they present eclectic features, characteristic of texts in the third category. In addition, several of the chapters included in the latter can also be considered new texts, even if they are not monographs. With these words of caution, the perspective and classification adopted here allows for a clearer definition of the structural aspects and several key conceptual approaches found in these works, starting with the role played by the forms of organization of knowledge derived from the source and the target cultures.

It should be noted that Persian texts dealing with Ayurvedic sources and materials rarely employ the term Āyurveda to refer to them. An analogous approach characterizes the translation of other fields of Indic knowledge, such as in the Persian texts discussing yogis’ practices where the term yoga is scarcely ever mentioned.<sup>28</sup> Authors of Persian medical texts often refer to Ayurvedic knowledge by referring to it as the knowledge and the books of the physicians of India (*ḥukamā’-i hind, aṭibbā’-i hind*), such as in the preface of the *Ma’dan al-šifā’*. Many texts use similar compound expressions made with the noun *hind* and the adjective *hindī* in order to make clear to the reader that Ayurvedic materials are being discussed, such as in the case of the expression *mufradāt-i hindī* that is often found in Persian texts and used to refer to Ayurvedic “simple drugs” (*mufradāt*). On the other hand, Muslim scholars were certainly aware of the term Āyurveda. Abū l-Faḥl ‘Allāmī (d. 1602) uses this term, *āyurbēd* in Persian script, in the list of the Indian sciences he provides in the *Ā’in-i Akbarī*; he provides a concise definition of this science as the knowledge of the body (*šināsā’-i a’zā’*, lit. of the limbs) and the preservation of health (*nigāhdašt-i tandurustī*).<sup>29</sup> Abū l-Faḥl’s definition actually closely resembles Galen’s definition of medicine as given in Muslim texts.<sup>30</sup> It is only in the 19<sup>th</sup> century that a Muslim physician, Ḥakīm Aḥmad ‘Alī Ḥān first used the term *bēdik* in the title of a book on this topic, the *Ṭibb-i bēdik* (Vedic medicine).<sup>31</sup>

### 3.1. Translation of Ayurvedic Sources

With regard to the translations, it is first necessary to question the impact of the main classical works of the Ayurvedic school, that is to say the texts by Caraka, Suśruta and Vāgbhaṭa, which had already been translated during the Abbasid period.<sup>32</sup> Of these texts, only one of Vāgbhaṭa’s treatises, the *Aṣṭāṅgahrdayasaṃhitā*, was adapted into Persian in South Asia. The Persian version was made by ‘Alī Muḥammad ibn Ismā‘īl Aṣawālī Aṣīlī at the request of Sultan Maḥmūd Begrā (r. 1458-1511) of Gujarat and it was titled *Ṭibb-i šifā’-i Maḥmūd-šāhī*, “Medicine for the Healing of King Maḥmūd”.<sup>33</sup> On the contrary, we are not aware of any integral translations of Caraka and Suśruta’s works, despite their being quoted in several Persian texts. In the 16<sup>th</sup> century, parts of the *Suśrutasaṃhitā* were translated and included in *Ma’dan al-šifā’-i Sikandar-šāhī*. The first section (*bāb*) of the Persian text is based on the *sūtrasthāna*, i.e. the first section of Ayurvedic texts such as the *Suśrutasaṃhitā* from which many chapters were translated. The second *bāb*, on

<sup>28</sup> Ernst 2005: 42.

<sup>29</sup> Abū al-Faḥl ‘Allāmī 1877: 119.

<sup>30</sup> See, among others, Ḥān 1978: 353.

<sup>31</sup> Aḥmad ‘Alī Ḥān. *Ṭibb-i bēdik*. Ms. Aligarh, Mawlānā Āzād Library, Subḥ. 616/21.

<sup>32</sup> On the concept of classical texts in Indian culture, see Pingree 1987.

<sup>33</sup> The translator was a local scholar from Asawal, a settlement near Ahmadabad, see Zahoori 1964.

embryology and anatomy, is an adaptation of the third section (*śārīrasthāna*) of the *Suśrutasamhitā*.<sup>34</sup>

Muslim scholars are more interested in two works of the so called “minor triad” (*laghutrayī*) of the Ayurvedic tradition: the *Mādhavanidāna* and the *Śārṅgadharasamhitā*.<sup>35</sup> The *Mādhavanidāna* or *Rogaviniścaya* is a treatise attributed to Mādhava who probably lived around the 8<sup>th</sup> century.<sup>36</sup> This renowned text on diagnosis had an important influence on Persian works. It is one of the main sources used by Miyān Bhuwa for the compilation of the *Ma‘dan al-šifā’-i Sikandar-šāhī*. In the following century, a translation of the *Mādhavanidāna*, or of a commentary on this text, was made by Abū l-Faṭḥ Čišṭī and dedicated to the Mughal emperor Awrangzeb (r. 1658-1707).<sup>37</sup> The *Śārṅgadharasamhitā* by Śārṅgadhara (ca. 14<sup>th</sup> century), as Jan Meulenbeld emphasizes, reflects the changes in Ayurvedic practice in relation to the canons of the ancient *samhitā*.<sup>38</sup> Śārṅgadhara’s treatise deals notably with diagnosis of the pulse and iatrochemistry, two subjects that were central to Muslim interest but were not, however, dealt with in the works by Caraka, Suśruta and Vāgbhaṭa. The *Śārṅgadharasamhitā* is translated by an anonymous scholar in the 17<sup>th</sup> century with the title of *Miqrāz al-amrāz*, the “Scissors of diseases”.<sup>39</sup> Another translation was done at an unknown time by Muḥammad Jamīl ibn ‘Abd al-Wahhāb who in his preface compares the practical (*‘amalī*) benefits of Śārṅgadhara’s work with those of *Qānūn fī l-tibb*.<sup>40</sup>

Interest in the most recent texts of the Ayurvedic tradition is also evident in other translations. The *Madanavinoda* is a *nighaṇṭu* (dictionary) of drugs and foods made in 1375 for the Hindu ruler Rāja Madanapāla.<sup>41</sup> It was first translated in the 17<sup>th</sup> century under the title *Dastūr al-hunūd* (Rule of the Indians) by the son of Mahābat Ḥān Ḥusaynī (d. 1044/1634), Amān Allāh Ḥān ‘Amānī’ (d. 1046/1637), who became the governor of the Mughal provinces of Bengal and Malwa.<sup>42</sup> A second translation, entitled *Mufradāt-i Bikramī*, was made by Muḥammad Čirāg al-Dīn Lāhawrī.<sup>43</sup> It is probably not by chance that a text known for having been translated twice is not an ancient classic but a dictionary of remedies—that is to say, a genre that constitutes one of the forms of writing favoured by the Muslim authors.

The *Cikitsāñjana* by Vidyāpati (*fl.* end of the 17<sup>th</sup> century) was translated by Sayyid Aḥmad at the request of a Hindu Maharaja, at the beginning of the 18<sup>th</sup> century, shortly after it was composed. It is a treatise dealing with therapeutics, while the introductory paragraphs discuss the analysis of pulse and uroscopy.<sup>44</sup> The *Pākāvalī*, a text on the properties of foods, was translated in 1225/1810-11 by the Indian scholar Dayā Nāth at the request of Sikandar Jāh (r. 1803-1829), the ruler of

<sup>34</sup> See Speziale 2018a: 173-177.

<sup>35</sup> The third work of the “minor triad” is the *Bhāvaprakāśa* of Bhāvamiśra (16<sup>th</sup> century), see Meulenbeld 2000: 196, 239, 246.

<sup>36</sup> See Meulenbeld 2000: 71-72.

<sup>37</sup> Abū l-Faṭḥ Čišṭī. *Mir‘āt al-ḥukamā-yi Awrang-šāhī*. Ms. London, Wellcome Trust Library, pers. 31.

<sup>38</sup> See Meulenbeld 2000: 196-210.

<sup>39</sup> *Miqrāz al-amrāz*. Ms. Montreal, Library of McGill University, OL 7785/30.

<sup>40</sup> Muḥammad Jamīl ibn ‘Abd al-Wahhāb. *Ḥadīqat al-šifā’*. Ms. London, Wellcome Trust Library, pers. 603.

<sup>41</sup> On the Sanskrit work see Meulenbeld 2000: 187-189; Pingree 2001a: 702.

<sup>42</sup> Mahābat Ḥān Ḥusaynī was a high commander of the Mughal’s army. Šāh Jāhān (r. 1628-1658) gave to Amān Allāh the title of Ḥān-i Zamān, see also Speziale 2011.

<sup>43</sup> Lāhawrī’s translation was published at the end of the 19<sup>th</sup> century, see Storey 1971: 326, Munzawī 1382 š./2003: 3725.

<sup>44</sup> Sayyid Aḥmad. *Kuḥl al-časm-i ṭabībān*. Ms. Venice, Biblioteca Nazionale Marciana, Or. CXLIX. On the *Cikitsāñjana* and its author see Meulenbeld 2000: 325-326.

Hyderabad.<sup>45</sup> Concerning the production of manuscript copies of these Persian translations, we are currently aware of several copies of the translation of the *Madanavinoda* but only of a few copies of the translations of the *Aṣṭāṅgahṛdayasaṃhitā* and the *Śārṅgadharaśaṃhitā*. Other translations are often preserved in only a single copy, which could indicate a more restricted circulation.

### 3.2. New Persian Treatises on Āyurveda

Notwithstanding the efforts made in this sense, the translation of Sanskrit sources did not become the most important type of text for the circulation and integration of Ayurvedic materials into Persian medical culture. It was not chiefly through the translation and reading of the classics of the Sanskrit tradition that the Indian Muslim physicians studied Ayurvedic medicine. Caraka, Suśruta and Vāgbhāta and their works did not play a role comparable to that of Hippocrates and Galen in the translation movement from Greek to Arabic. Persian study did not really give rise to a Buqrāṭ or a Jālīnūs of the Ayurvedic tradition but rather to the direct emergence of authors such as Ibn Sīnā, that is to say, scholars who rewrote the content from older sources (both written and oral) into new treatises. For the same reason, Persian commentaries (*ṣarḥ*) and annotations (*ḥāṣiya*) of the classics of Āyurveda were not written by Muslim scholars.

The composition of new texts on Āyurveda in Persian constitutes a prominent aspect of this trend of study as well as a central element of the creation of a Persianised version of Ayurvedic medicine more likely to be circulated among Muslim physicians in South Asia. The earliest known Persian text based on Indian materials is Ḥwāja Šams Mustawfī's *Majmū' a-yi Šamsī* (early 14<sup>th</sup> century), which is no longer extant but is mentioned by contemporary and later authors.<sup>46</sup> The *Ma'dan al-šifā'-i Sikandar-šāhī* was completed in 918/1512-3, mostly likely in Agra, thanks to the efforts of Miyān Bhuwa ibn Ḥawāṣṣ Ḥān, Sultan Sikandar Lodī's (r. 1489-1517) vizier (*wazīr-i a'zam*). Miyān Bhuwa also had close connections with the Čištī master 'Abd al-Quddūs Gangohī (d. 944/1537), one of the figures most representative of the interactions between Sufism and Hinduism in the 16<sup>th</sup> century.<sup>47</sup> He assembled and added a preface to this extensive work in 128 chapters based on the translations of chapters from various Sanskrit texts, which were made for him by a group of scholars.<sup>48</sup> Rizq Allāh Muštāqī (d. 989/1581-2), a contemporary of Miyān Bhuwa, remarks in his chronicle that "There is no book on medicine more esteemed (*mu'tabar*) in the Indian region and anyone who reads it understands what a book it is."<sup>49</sup> The *Dastūr al-aṭibbā'* was written in the Deccan by Muḥammad Qāsim Firišta

<sup>45</sup> Dayā Nāth. *Tarjuma-yi Pākāvalī*. Ms. Hyderabad, Telangana Government Oriental Manuscript Library and Research Institute, 449, f. 3a. Among the other translation, are a few works of an uncertain period (such as the *Mujarrab al-šifā'*, written in Hindi by Aḥmad ibn Muḥammad Multānī and then adapted in Persian by an unknown translator, see Ivanow 1984: 733-734) and some texts written in the Colonial context, at the request of the British.

<sup>46</sup> Speziale 2015.

<sup>47</sup> See Digby 1975; Speziale 2010a: 43.

<sup>48</sup> Miyān Bhuwa writes in the preface that the work is based on selections (*ḥulāṣa*) from several Indian works, among which he mentions those of Suśruta, Caraka, Jātūkarna, Bhoja, Bheḍa, Vāgbhāta, Śārṅgadhara, Vaṅgasena, Kayadutta, as well as some texts by their titles, *Rasaratnākara*, *Mādhavanidāna*, *Cakradatta* and *Cintāmaṇi*, Bhuwa Ḥān, 1294/1877: 3. Translations from works which are not mentioned in the preface are also included in books, such as the *Madhukośa* (a commentary of *Mādhavanidāna*) and *Yogamuktāvalī*.

<sup>49</sup> Muštāqī 1422/2002: 79-80.

(born ca 978/1570) who worked at the court of Ibrāhīm ‘Ādil Šāh II (r. 1580-1627) of Bijapur. He migrated from Astarabad (Iran) when he was a child and became known especially as an historian and the author of *Gulšan-i Ibrāhīmī*. He studied with the Indian teacher Caturbhuj al-Hind<sup>50</sup> and at Bijapur he came into contact with the Indian physician Bīmā Jī who was the *ra’īs al-aṭibbā’* (chief physician) at Sultan Ibrāhīm’s court.<sup>51</sup>

Among the Persian texts dealing with Ayurvedic materials dedicated to Awrangzeb, the *Ṭibb-i Awrang-šāhī* by Darwīš Muḥammad became the most popular. Darwīš Muḥammad came from Eminabad (near Gujranwala) and, as he writes of himself, he was a spiritual disciple (*murīd*) of Farīd al-Dīn Ganj-i Šakar (d. 664/1265, Pakpattan) a prominent Čištī master, who like Darwīš Muḥammad was originally from Punjab. Along with other authors of this genre of texts, Darwīš Muḥammad did not hesitate to criticise aspects of Indian thought such as the view that the elements of the human body were five and not four, as stated in Greco-Arabic thought.<sup>52</sup> Šāh Ahl Allāh (d. 1190/1776) wrote the *Takmila-yi hindī* a compact handbook of Ayurvedic medicine. He was the brother of the famous theologian and Naqšbandī Sufi of Delhi, Šāh Walī Allāh (m. 1176/1762) and also made a Persian translation of the *Mūjaz al-Qānūn* by Ibn al-Nafīs (m. 687/1288), a popular Arabic abridgment of the *Qānūn*. Many of the new Persian texts were dedicated to Indian pharmacology, among them are the *Ta’līf-i Šarīfī* by Muḥammad Šarīf Ḥān (d. ca 1222/1807, Delhi), a dictionary of remedies based on the model of the Muslim pharmacopeias,<sup>53</sup> and the more extensive *Tadkirat al-hind* by Rizā ‘Alī Ḥān, completed in Hyderabad in about 1237/1821-22.<sup>54</sup>

The production of this type of text raises several questions. How do these texts structure, or restructure, the relationship between the materials studied and the method of exposition? What is the relationship between the conceptual organisation and structure of the Persian texts and those of the Sanskrit works? Should we locate these works within a dynamic of continuity, or rather of rupture and change, with regard to the earlier and contemporary pedagogical criteria of the Ayurvedic textual tradition transmitted through the Indian languages? The order in which a scientific discipline is presented in a text represents an important indicator of how a certain body of knowledge is being defined, explained or re-examined in a specific cultural space, or at a given time. One of the things that encouraged Muslim scholars to write new texts on Ayurvedic medicine was precisely the style of the Indian works. In the preface to *Ma’dan al-šifā’-i Sikandar-šāhī*, Miyān Bhuwa makes an eloquent remark on the Sanskrit texts, as he explains his reasons for compiling the book:

Among the books by Indian physicians, there are none that contain all the rules of medicine and none of the texts is independent of the others. In addition, they are expressed in a language which is inaccurate (*zabān-i ġayr-i faṣīḥ*) and in a style that is disagreeable (*adā’-i ġayr-i malīḥ*).<sup>55</sup>

<sup>50</sup> Ḥasanī 1411/1990: 396

<sup>51</sup> Firišta mentions Bīmā Jī by the honorific title of *Jālīnūs-i zāman*, the “Galen of the time,” a title usually reserved for Muslim scholars, Firišta. *Dastūr al-aṭibbā’*. Ms. Copenhagen, Det Kongelige Bibliotek, pers. XXII, f. 66a. On Bīmā Jī, see also Fārūqī 1420/1999: 140.

<sup>52</sup> Darwīš Muḥammad. *Ṭibb-i Awrang-šāhī*. Ms. London, Wellcome Trust Library, pers. 202/c: 4-5.

<sup>53</sup> Šarīf Ḥān was the eponymous scholar of the renowned Šarīfī family of physicians.

<sup>54</sup> Rizā ‘Alī Ḥān translated into Persian and completed a text which had been originally written in Arabic by his father, Maḥmūd ‘Alī ibn Ḥakīm Ḥazrat Allāh, see Rizā ‘Alī Ḥān 1353/1935: 1-3, 4-5. Rizā ‘Alī Ḥān worked as medical officer for the Niẓām’s Princely State of Hyderabad.

<sup>55</sup> Bhuwa Ḥān, 1294/1877: 3.

This fairly critical viewpoint is indicative of the perception an early 16<sup>th</sup> century Muslim scholar would have had of the Ayurvedic texts and, in particular, of the difficulties he must have encountered in reading them. Many aspects of the rational structure and method of explanation in the Indian medical texts were in fact very different from those of Persian culture. The Ayurvedic works are characterized by the presence of mythological elements, the usage of concepts drawn from Indian philosophical schools, and by numerous digressions. Moreover, there may be no clear separation between the section on theory and the section on practice. In addition, explanations are based on complex rules of presentation called *trantrayukti*, of which there are over thirty, and a knowledge of these rules is fundamental to a correct understanding and interpretation of the text. The most important rule is the *adhikaraṇa*, or the specification of the subject of a work, section, chapter, etc., which is often concealed in the text. It can be deciphered with the help of a commentary, while the title of a chapter can be based on the first word of the text, as is the case of the first chapter of the *Carakasamhitā*, on the “Span of Life,” which begins with these words. According to another of these rules, the *vidhāna*, that is to say “order,” a list of diseases can be organized beginning with the most dangerous, while, following the same hierarchical principle, a list of remedies can be organized starting with the most efficient.<sup>56</sup>

The structure of the new works in Persian is quite different from that of the Ayurvedic treatises. Many authors do not aim to imitate and transmit the forms of presentation in the Sanskrit tradition, but they seek rather to restructure the content according to a Persian perspective. These texts have to fulfil several requirements of a practical and conceptual nature, and particularly, to fill the gap that separates the author and the reader from the object studied and the manner in which it is represented and taught. The receiving culture’s imposition of new conceptual structures leads to a de-Indianization of the object of study, so that it is no longer necessary to know Indian philosophy or the *trantrayukti*, to be able to read and study the texts on Āyurveda.

However, these Persian studies are not carried out completely independently of the forms of presentation used in the Sanskrit tradition. Muslim authors devote multiple efforts to the study of Ayurvedic pathology and some Persian texts assimilate the classification of diseases of Mādhava’s *Mādhavanidāna*. Although the *Mādhavanidāna* was chiefly a compilation of earlier sources, it played an influential role in rearranging the order of diseases described in Ayurvedic texts compared to the treatises of Caraka, Suśruta and Vāgbhaṭa. Mādhava’s model was followed by many later works such as Vaṅgasena’s *Cikitsāsārasaṅgraha* (11<sup>th</sup> or 12<sup>th</sup> century) and Cakrapāṇidatta’s *Cikitsāsamgraha*.<sup>57</sup> The use of this model is already attested in some Persian works written before the Persian adaptation of the *Mādhavanidāna* dedicated to Awrangzeb. This nosographic scheme is integrated into the chapters on pathology and treatment of some Persian works, such as in the last section of the *Ma’dan al-šifā’-i Sikandar-šāhī*. Also in the 16<sup>th</sup> century, Bīnā ibn Ḥasan adopts this model in his *Ḥulāṣa-yi Bīnā*, another treatise on Ayurvedic medicine.<sup>58</sup> During Awrangzeb’s reign, the Hindu physician Ladhamal ibn Bhairav arranged his Persian treatise *Baḥr al-fawā’id* according to Mādhava’s scheme.<sup>59</sup> In addition, the new Persian works make

<sup>56</sup> See Comba 1994; Comba 2001: 833-834.

<sup>57</sup> See Meulenbeld 1974: 2, Meulenbeld 2000: 61-62.

<sup>58</sup> Bīnā ibn Ḥasan. *Ḥulāṣa-yi Bīnā*. Ms. London, Wellcome Trust Library, pers. 601.

<sup>59</sup> Ladhamal ibn Bhairav. *Baḥr al-fawā’id*. Ms. Copenhagen, Det Kongelige Bibliotek, pers. XXVI.

references to Ayurvedic texts, or sometimes provide translations of certain passages. A representative example is the anonymous *Mā' al-ḥayāt* which abounds with quotes from Caraka, Suśruta and Vāgbhaṭa. Nonetheless, as can be seen from the *Mā' al-ḥayāt*, structured according to the *a capite ad calcem* criteria of the Arabic tradition, the Indian sources are used as 'quotes' within a discourse on different subjects, but they do not provide a model that organizes the order of the book.

Although the new Persian treatises share several features, they are not based on a single model. These works take the form of general manuals on Ayurvedic medicine, they can be dedicated to pathology and therapeutics, they also appear in the form of monographic treatises on a more specific domain, notably pharmacology, or in the form of texts that combine these genres. These texts and forms of expression are homogeneously integrated into the main trends of the rest of the Persian medical production of the same period, which is characterized by the compilation of new treatises as well as by monographs. Most of the innovations introduced by the Persian works on Āyurveda, particularly in what concerns the forms of the content's presentation, result in fact from efforts made by the authors to adhere more closely to the contemporary trends of Muslim medical culture.

The principles consolidated in the texts of the Arabic and Persian tradition provided important models for the structure of these works. The first and most important of these criteria is the separation between the domains of theoretical (*naẓarī*, *'ilmī*) and practical (*'amalī*) medical knowledge. Numerous medical texts of the Muslim tradition are based on this conceptual organization. The new Persian texts on Ayurvedic medicine often adopt this form of division of knowledge. Treatises like the *Ma'dan al-šifā'-i Sikandar-šāhī*, Firišta's *Dastūr al-aṭibbā'*, Darwīš Muḥammad's *Ṭibb-i Awrang-šāhī*, Šāh Ahl Allāh's *Takmila-yi hindī*, as well as Riżā 'Alī Ḥān's *Taḍkirat al-hind*, all have a structure based, *grosso modo*, on this model. A section focusing chiefly on the principles of Ayurvedic treatment is placed at the beginning of the work and is followed by chapters dealing primarily with the more practical aspects of the profession (see Table 1).

The range of materials dealt with in these works includes the main concepts of Ayurvedic thought, such as the theory of the elements and humours, but it varies from author to author. In the *muqaddima* Firišta discusses the doctrine of the seven *dhātu* (bodily tissues, glossed by the Arabic *arkān*), the theories of the three humours (*doṣa*, glossed by the Arabic *aḥlāṭ*) and the five elements (*tattva*, glossed by the Arabic *'anāšir*), the causes (*'ilal*) of diseases, the methods of treatment, the rules for physicians, the Indian seasons, foods and hygiene.<sup>60</sup> Among the topics dealt with by Darwīš Muḥammad in the first *bāb*, are the bodily constitution, the theory of elements and humours, the seven *dhātu*, the generation of embryo, anatomy, the tastes, the ages of life, pharmacological lexicon, hygiene, food and the diagnosis by the pulse and urine. The first two *taḍkira* of Riżā 'Alī Ḥān's work look at the elements, the bodily constitution, the humours, the *dhātu*, food and drink, the seasons, the tastes, the weight of drugs and some other pharmacological issues.<sup>61</sup>

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<sup>60</sup> Firišta. *Dastūr al-aṭibbā'*. Ms. Copenhagen, Det Kongelige Bibliotek, pers. XXII, ff. 2a-17b.

<sup>61</sup> Riżā 'Alī Ḥān 1935, vol. 1: 6-46.

<i>Ma‘dan al-šifā’</i> (16 <sup>th</sup> century)	<i>Dastūr al-aṭibbā’</i> (Late 16 <sup>th</sup> - early 17 <sup>th</sup> century)	<i>Ṭibb-i Awrang- šāhī</i> <sup>62</sup> (second half of 17 <sup>th</sup> century)	<i>Takmila-yi hindī</i> (18 <sup>th</sup> century)	<i>Taḍkira al-hind</i> (19 <sup>th</sup> century)
<p><b>Section (bāb) 1.</b> Preliminary aspects of treatment (<i>muqaddimāt-i ‘ilāj</i>), in 32 parts (<i>faṣl</i>).</p> <p><b>Section 2.</b> Embryology and anatomy, in 9 parts.</p> <p><b>Section 3.</b> Symptoms and treatment of diseases, in 87 parts.</p>	<p><b>Introduction</b> (<i>muqaddima</i>). On the principles of Indian medicine, in 9 parts (<i>fā’ida</i>).</p> <p><b>Chapter (maqāla) 1.</b> Simple drugs and food, arranged as a dictionary.</p> <p><b>Chapter 2.</b> Compound drugs, in 15 parts.</p> <p><b>Chapter 3.</b> Treatment of diseases, in 160 parts (<i>faṣl</i>).</p> <p><b>Conclusion</b> (<i>ḥātima</i>). On various topics.</p>	<p><b>Chapter (bāb) 1.</b> Principles of medicine, in 28 parts (<i>faṣl</i>)</p> <p><b>Chapter 2.</b> Treatment of diseases, in 71 parts</p> <p><b>Chapter 3.</b> Treatment of women’s diseases, in 21 parts</p> <p><b>Chapter 4.</b> Oxides of metals, in 10 parts</p> <p><b>Chapter 5.</b> Purgation, emesis, cauterisation, etc., in 8 parts</p> <p><b>Chapter 6.</b> Compound remedies, in 13 parts</p> <p><b>Chapter 7.</b> Simple remedies, arranged as a dictionary</p>	<p><b>Introduction.</b> Basic concepts of Ayurvedic medicine.</p> <p><b>Part 1.</b> Simple drugs, arranged as a dictionary.</p> <p><b>Part 2.</b> Treatment of diseases.</p>	<p><b>Parts (taḍkira) 1 and 2.</b> On the basic principles of Ayurvedic medicine.</p> <p><b>Part 2.</b> Dictionary of remedies.</p> <p><b>Conclusion</b> (<i>ḥātima</i>). On the lexicon.</p>

Table 1. Organization of topics in five Persian texts dealing with Ayurvedic medicine.

In the fields of pathology and treatment of diseases, several authors adopt the *az sar tā qadam* classification, that is to say from head to foot. This was a typical nosographic schema found in Arabic and Persian books, and its origins date back to the pre-Islamic scientific tradition. For example, the *Kitāb al-asbāb wa-‘alāmāt* by Najīb al-Dīn al-Samarqandī (d. 619/1222), is organised according to this vertical schema of the human body. Samarqandī’s treatises on pathology and treatment became one of the most widely read Arabic medical works in South Asia, particularly through its commentaries, and it was also studied by Hindu physicians, such as

<sup>62</sup> The order of chapters and the number of *faṣl* differs in the manuscript copies.

Swāmī Kedār Nāth (b. 1857) of Meerut.<sup>63</sup> The Muslim works on physiognomy (*qiyāfa*, *firāsa*) also adopt this order.

This criterion is incorporated into several Persian works dealing with Ayurvedic medicine. It is used both as a method to arrange the main bulk of the text or the section on the treatment of diseases. It is found for example in the third chapter of the *Dastūr al-aṭibbā*’ by Muḥammad Qāsim Firišta and in the section on the treatment of diseases in the *Takmila-yi hindī* by Šāh Ahl Allāh, which begins with fever and is then organized *az sar tā qadam*. It is used in the *Ṭibb-i hindī*, a collection of prescriptions by Muḥammad Akbar Arzānī (d. 1134/1722) who also wrote one of the most popular Persian adaptations of Nafīs ibn ‘Iwaḥ Kirmānī’s Arabic commentary on the *Kitāb al-asbāb wa-l-‘alāmāt*.<sup>64</sup> Ḥakīm Aḥmad ‘Alī Ḥān, a physician of the first half of the 19<sup>th</sup> century, adopts this pattern to structure his *Ṭibb-i bēdik*, a handbook of Ayurvedic treatment divided into forty chapters, of which the final ones are devoted to heterogeneous medical and pharmacological topics.<sup>65</sup> The anonymous *Mā’ al-ḥayāt*, divided in thirty-two chapters, is also organized along the same lines.<sup>66</sup>

In the field of pharmacology, the Indian remedies were often classified and presented in the Persian alphabetical order, that is to say, in the style of a *farhang* (dictionary) typical of Muslim literature. This method represents an important step in the process of Persianisation of Indian knowledge, and at the same time, it constitutes one of the most efficient means of facilitating the Muslim physicians’ use of the texts. The *farhangs* of remedies and the treatises on pathology and treatment provided different but complementary views that physicians could draw upon in their practice. While the former would enable a rapid identification of remedies, presented in alphabetical order, the latter would provide an overview of diseases and remedies following a vertical anatomical order.

The *farhang* often forms the structural basis of Persian monographs on Indian remedies, like the *Ta’līf-i Šarīfī* by Muḥammad Šarīf Ḥān, which includes more than one thousand entries, and the *Tadkirat al-hind* by Riḏā ‘Alī Ḥān. Šarīf Ḥān explains that he wanted to write a book on Indian simple drugs (*mufradāt*) similar to the *Tuḥfat al-mu’minīn* by Mīr Mu’min Tunakābunī and the *Iḥtiyārāt-i Badī’ī* by Zayn al-Dīn ‘Alī al-Aṭṭār, so that it would be easy to identify the properties of drugs.<sup>67</sup> Although they adopt the same format, the *Ta’līf-i Šarīfī* and the *Tadkirat al-hind* are also quite different, especially as the latter contains a detailed introduction to the principles of Ayurvedic treatment. Among the other Persian dictionaries of Indian remedies, are the *Mufradāt-i adwiya-yi hindiyya* by Muḥammad Mahdī of Akbarābād (Agra),<sup>68</sup> who was a contemporary of Šarīf Ḥān, and the *Mufradāt-i hindī* by Šaraf al-Dīn ibn Qāzī Šams al-Dīn of Sahawar (Uttar Pradesh), which was completed in 1221/1806-1807 and was chiefly based on earlier Persian texts.<sup>69</sup>

A distinctive *farhang* is Ġulām Imām’s *Mu’ālajāt-i nabawī* (Prophetic remedies), dedicated, as the author states in the preface, “To the sayings (*aḥādīṯ*) of

<sup>63</sup> Fīrūz al-Dīn 1913, vol. 1: 501.

<sup>64</sup> Arzānī. *Ṭibb-i hindī*. Ms. Aligarh, Aligarh Muslim University, pers. 353.

<sup>65</sup> Aḥmad ‘Alī Ḥān. *Ṭibb-i bēdik*. Ms. Aligarh, Mawlānā Āzād Library, Subh. 616/21.

<sup>66</sup> *Mā’ al-ḥayāt*. Ms. Hyderabad, Telangana Government Oriental Manuscript Library and Research Institute, pers. 340.

<sup>67</sup> Šarīf Ḥān 1280/1863: 5-6.

<sup>68</sup> Akbarābādī. *Mufradāt-i adwiya-yi hindiyya*. Ms. Aligarh, Mawlānā Āzād Library, Sub. 61043/11.

<sup>69</sup> Muḥammad Šaraf al-Dīn. *Mufradāt-i hindī*. Ms. Aligarh, Ibn Sina Academy of Medieval Medicine and Sciences.

the Prophet and the properties (*hawāṣṣ*) of Indian medicines.”<sup>70</sup> This text constitutes an attempt to Islamize the content of the book and to adapt the Muslim genre of works on the *ṭibb al-nabī* (medicine of the Prophet) to the natural and cultural context of South Asia.<sup>71</sup> However, Muḥammad’s *aḥādīṭ* serve chiefly to create the framework of the book, and in reality they are only mentioned in relation to a limited number of substances, including common foods such as oranges and melons. The *Mufradāt-i hindī* by José de Silva of Jaipur, completed in 1227/1812, constitutes an interesting example of the assimilation of the *farhang* style by a Christian physician writing on Indian *materia medica* in Persian.<sup>72</sup> Moreover, this arrangement is used within sections of works like, for example, the chapters on simple remedies in the *Dastūr al-aṭibbā*’ by Firišta, the *Ṭibb-i Awrang-šāhī* by Darwīš Muḥammad and the *Takmila-yi hindī* by Šāh Ahl Allāh.

A second method of presentation typical of Muslim medical culture is based on the division of drugs into simple (*mufrad*) and compound remedies (*murakkab*). For example, Ibn Sīnā dedicated book two of the *Qānūn fī al-ṭibb* to simple drugs and book five to compound ones, while al-Aṭṭār’s *Iḥtiyārāt-i Badī’ī* is divided into two parts, the first dealing with simple remedies, presented in alphabetical order, and the second with compound ones. In the same way, this classification is used in sections of Persian works on Indian medicine, such as the *Dastūr al-aṭibbā*’ where Firišta devotes the first two chapters to simples and compounds respectively, and the *Ṭibb-i Awrang-šāhī* by Darwīš Muḥammad who deals with compound and simples in the last two chapters. Moreover, certain works are solely or principally dedicated to the former of these categories, for example the *Ta’līf-i Šarīfī* (sometimes called *Mufradāt-i hindī*) by Muḥammad Šarīf Ḥān, the *Mufradāt-i adwiya-yi hindiyya* by Muḥammad Maḥdī Akbarābādī, the *Mufradāt-i hindī* by Šaraf al-Dīn ibn Qāzī Šams al-Dīn, the *Mufradāt-i hindī* by Ḥakīm Muḥammad Yaḥyā and the *Mufradāt-i hindī* by José da Silva. The two organizational criteria, the alphabetical and the division into simple/compound, can also therefore be superposed, as is shown in the texts by Šarīf Ḥān, Akbarābādī and Šaraf al-Dīn, and in the chapters on simple remedies of the treatises by Firišta, Darwīš Muḥammad and Šāh Ahl Allāh.

The influence of certain styles evolved over the centuries. The impact of the conceptual structures of Muslim texts is certainly less pronounced in the *Ma’dan al-šifā’-i Sikandar-šāhī* than in later treatises. The production of monographs by Muslim physicians, in the form of Persian dictionaries of Indian remedies, essentially occurs during the 18<sup>th</sup> and 19<sup>th</sup> centuries. This shows that the development of this type of monograph can only be envisaged in the wake of the efforts made by several generations of scholars. Within this corpus, some works enjoy far wider circulation in South Asia than others. This is particularly true of some of the new treatises in Persian, which in fact became the most copied and used works on the subject, such as the *Ma’dan al-šifā’-i Sikandar-šāhī*, the *Dastūr al-aṭibbā*’, the *Ṭibb-i Awrang-šāhī* and the *Ta’līf-i Šarīfī*.

### 3.3. Composite Treatises

The Persian monographs on Āyurveda, either in the form of translations or

<sup>70</sup> Ġulām Imām. *Mu’ālaḡāt-i nabawī*. Ms. Hyderabad, Salar Jung Library, pers. *ṭibb* 239: 3.

<sup>71</sup> On the *ṭibb al-nabī* in the Arabic tradition, see Perho 1995; in South Asian culture, see Speziale 2010a: 193-204.

<sup>72</sup> De Silva. *Mufradāt-i hindī*. Ms. Aligarh, Ibn Sina Academy of Medieval Medicine and Sciences, *ṭibb* 86.

new works, represent the most visible result of these studies. Nonetheless, they do not provide an exhaustive picture. The third type of sources that should be considered are the chapters and descriptions included in eclectic Persian medical works. The treatises on Avicennian medicine produced in South Asia often incorporate notions drawn from local knowledge, particularly on the subject of pharmacology, and these composite texts constitute one of the main vectors that contribute to the circulation of elements of Ayurvedic medicine in Persian medical culture. This type of source plays a central role in a more complete examination of the modalities by which Indian knowledge is assimilated into Persian scientific and textual culture, as well as the forms and products of the interaction between the two schools. Certain works that occupy a central place in the structuring of this interaction are not monographs on Āyurveda, but texts mainly dedicated to Avicennian medicine that seek to integrate material drawn from the Indian environment. The composite texts thus constitute crucial sources for a more precise evaluation of the spread of these studies, as well as their impact on the overall Persian culture in South Asia.

This is not an innovation with regard to the earlier Muslim tradition. The inclusion of a section on Indian medicine is a practice that dates back to the *Firdaws al-ḥikma* by ‘Alī ibn Sahl Rabbān al-Ṭabarī (9<sup>th</sup> century). The *Majmū‘a-yi Žiyā’* by Žiyā’ Muḥammad ‘Umar Ġaznawī (first half of the 14<sup>th</sup> century) and the oldest preserved Persian source on Ayurvedic medicine, is a text of this type. It is a medical handbook divided into forty-six chapters (*bāb*) that cover different medical topics, including the treatment of horses and magical remedies. One chapter, the twenty-fifth, is devoted to the diseases and treatment of Ayurvedic wind (*bād*); chapter forty-one deals with the mercurial and iatrochemical drugs (*dar rasahā*) of the Indian physicians, a subject which was also widely discussed by other Muslim scholars in South Asia.<sup>73</sup> The *Šifā’ al-marāz* (790/1388) by Šihāb al-Dīn Nāgawrī, which offers a new quadripartite schema of humoral pathology, combining the doctrines of Avicennian and Ayurvedic thought, is not a monograph on Indian medicine. It is a handbook divided into more than one hundred and sixty short chapters (*bāb*), covering many medical topics, beginning with pathology and the treatment of diseases. The account of the doctrine of the *tridoṣa* and the new model proposed by the author are provided in the first *bāb*, while descriptions of Ayurvedic materials are included in some other chapters, such as *bāb* one hundred and twenty-five, on the diagnosis of the pulse (*nabẓ*) according to Ayurvedic physicians.

Another expression of this tendency consists in the integration of Indian elements into some of the major Persian medical encyclopaedias of the Mughal period, the *Ganj-i bād-āward* by Amān Allāh Ḥān and the *Ilājāt-i Dārā Šikōhī* by Nūr al-Dīn Šīrāzī, compiled in the 17<sup>th</sup> century. Both these works provide an emblematic portrait of the overall medical knowledge in circulation during this period among Muslim scholars. The *Ganj-i bād-āward* is an extensive work on pharmacology and related subjects. The description of Indian materials is based on Ayurvedic sources, such as the works of Suśruta, Bhoja, the *Yogarātnāvalī* and the *Kāmasāstra*, and on earlier Persian sources, including Šams Mustawfī’s *Majmū‘a-yi Šamsī*. The second chapter of the second section (*ganjūr*) is dedicated to remedies used by Indian physicians (*murakkabāt-i ḥukamā’-i hind*) and it is divided into five parts (*‘aqd*) dealing with the properties (*ḥawāṣṣ*) of certain remedies, compound drugs (*murakkabāt*), poisons (*iṣlāḥ-i sammīyyāt*), while the last two deal with mercurial and

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<sup>73</sup> On Persian texts dealing with *rasasāstra*, see Speziale 2019.

metallic drugs.<sup>74</sup>

Nūr al-Dīn Šīrāzī's family included important figures active in the courtly movement of Persian study of Indian sources. His mother was the sister of two prominent scholars of Akbar's court, Abū l-Faẓl 'Allāmī (d. 1602) and his brother Fayzī (d. 1595). Abū l-Faẓl wrote the introduction to the translation of the *Mahābhārata* made for Akbar and, in the *Ā'in-i Akbarī*, provided an important description of Indian traditions. For Akbar, Fayzī translated Bhāskara's *Līlāvātī*, a Sanskrit text on arithmetic and geometry. The *Ilājāt-i Dārā Šikōhī* was written between 1642 and 1647 and dedicated to the Mughal prince Dārā Šikōh (d. 1069/1659), another emblematic figure of the Mughal enterprise of translation of Hindu sources into Persian. The work includes various discussions of Indian materials, especially on treatment, pharmacology, food, analysis of pulse, iatrochemistry (*murakkabāt-i rasāyan*), as well as chapters on Indian music (*rāg-i hindūstān*) and on the breathing exercises used by the yogis. The method employed by the author to incorporate the Indian materials does not follow the model of al-Ṭabarī's *Firdaws al-ḥikma* that dealt with the subject in a separate section of the text. Nūr al-Dīn deals with Indian notions in different sections and integrates this subject into the order of the contents of his work, adopting an approach similar to that found in the *Šifā' al-marāḏ*, a work certainly well known to Nūr al-Dīn, who includes it in the bibliography of texts used for the compilation of the *Ilājāt-i Dārā Šikōhī*.<sup>75</sup>

Among the Persian texts that present Indian knowledge, there are some apocryphal works attributed to Muslim scholars like Ibn Sīnā and the group of authors and Sufis associated with the composition of the *Haft aḥbāb*. The construction of this type of text constitutes another aspect of the dynamics of appropriation of Indian knowledge within Muslim culture. A short Persian treatise entitled *Dastūr al-'amal ba-qawl-i aṭibbā'-i hindī*, or "The Practical Rules (of Medicine) according to the Indian Physicians" is attributed to Ibn Sīnā. This short text examines the six seasons that exist in India according to the Hindu calendar, and their effects on the temperament and the three humours of the body according to Ayurvedic doctrine.<sup>76</sup>

The *Haft aḥbāb* (Seven friends) is one of the main Persian treatises dealing with Indian alchemy, including the therapeutic uses of mercurial and metallic preparations. This apocryphal work is attributed to a group of seven authors, including the Suhrawardī Sufī Ḥamīd al-Dīn Nāgawrī (d. 1246); the Čišṭī Sulaymān Mandawī (d. 1537), who was instructed in the principles of the yoga treatise *Amṛtakunḏa* by 'Abd al-Quddūs Gangohī; and Gyān Nāth Sa'ādatmand, a Nāth yogi converted to Islam who explains the alchemical knowledge and procedures transmitted by the yogis.<sup>77</sup> In addition, elements from Indian medical culture, including magical beliefs, circulate through non-medical Persian texts, like the *Malfūzāt* by the Sufī Jahāngīr Simnānī (15<sup>th</sup> century), and the *Nujūm al-'ulūm*, an encyclopaedia composed in Bijapur in the 16<sup>th</sup> century.<sup>78</sup>

#### 4. Conclusions

The emergence of a vast corpus of Persian texts on Ayurvedic medicine raises two parallel issues for the historiography of Asian scientific traditions: what place do

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<sup>74</sup> Amān Allāh Ḥān. *Ganj-i bād-āward*. Ms. New Delhi, Jāmi' a Hamdard, 1979, 1883.

<sup>75</sup> On the *Ilājāt-i Dārā Šikōhī*, see Speziale 2010c.

<sup>76</sup> See Speziale 2015.

<sup>77</sup> On the *Haft aḥbāb*, see Speziale 2006.

<sup>78</sup> On the *Nujūm al-'ulūm*, see Flatt 2011.

these texts occupy in Muslim and Persian scientific culture, and what role do these Persian treatises play in the history of Ayurvedic medical studies? To put this corpus of texts into context at a diachronic level involves reconsidering the perspective and chronology in which the development of medical studies in Muslim cultures has generally been perceived, particularly in relation to interactions with non-Muslim learning. The importance attributed to the translation movement in the Abbasid period and its Greco-Arabic-centric perspective have long been detrimental to a more precise vision of the production of the later periods and in other regions of the Muslim world where Arabic was not the main target language of translation. The assimilation of foreign medical knowledge does not end with the adaptation into Arabic of Greek materials that marks the emergence of Muslim scientific studies during the Abbasid period. The work of translation and the appropriation of medical knowledge from other cultures continues in South Asia, where Muslim scholars were confronted with a new natural, social and linguistic context. With the Persian texts produced in South Asia from the Sultanates period onwards, the descriptive paradigm of Muslim scholars' treatises on India changes considerably in comparison to the earlier works of the Arabic tradition. From this time on, Muslim representation of the region is no longer dependent on indirect accounts and second-hand material. India thus becomes the object of a vast scientific enterprise that encompasses both its culture and its nature, starting with its environmental features like its flora and the climate, which are widely studied in Persian treatises by Muslim scholars.

The second issue raises the question of the extent to which the interaction with Persian scientific culture determined the emergence of new forms of knowledge and new hybridizations of Ayurvedic medicine. The translation of content does not necessarily imply the integration of the forms originally used to express and organize that content. On the contrary, the new Persian treatises on Āyurveda attempted to conform to the styles and conceptual structures of the Persian scientific literature of their time. The Persian texts do not only constitute a means of 'translating' Indian medical knowledge, they also become a new means of 'expression' of Ayurvedic culture, and particularly of that learnt by Muslim scholars. This intellectual movement is more the creation of a variant of Āyurveda, adapted to Persian culture and its readers, than a faithful transposition of the forms of expression of Indian thought.

The Persian treatises apply new linguistic and cognitive categories to the analysis of the material that is the object of translation; the interpretation based on the criteria of the receiving culture is thus added to, and sometimes replaces, the criteria of the translated culture. Translation into Persian enables the development of a new mode of circulation of Indian medical culture. The Indianization of the Avicennian tradition is thus accompanied by a symmetrical process of Persianisation of Ayurvedic culture, that allows the latter to circulate beyond the Hindu world. In parallel, from the Mughal period onwards, the Hindu study of the Persian language brings about a change in the knowledge available to these scholars, who can now appropriate scientific and medical knowledge from Muslim culture.<sup>79</sup>

Concerning the readership of these texts, Persian treatises on Āyurveda written in South Asia were mainly intended for Muslim physicians who could not access Sanskrit sources and sought to learn about the Indian therapeutic tradition. Nonetheless, particularly from the 17<sup>th</sup> century onwards, the circulation of Persian scientific texts was no longer limited to Muslim scholars, and they also circulated amongst Hindu and other non-Muslim scholars who studied Persian, such as

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<sup>79</sup> See Speziale 2018a: 128-163.

Ladhamal ibn Bhairav and José de Silva. Lastly, during the colonial period, Persian sources, including medical texts, were also used by members of the British colonial elite who needed to acquire a knowledge of the local culture and nature.<sup>80</sup>

The influence of these Persian studies on the medical culture of other regions of the Muslim world is still an issue that needs to be examined in greater detail. Persian texts written in South Asia did also circulate in other parts of the Persian-speaking world. Muslim physicians who migrated in large numbers from Iran and Central Asia to India, especially during the Mughal period, including those who returned to their homelands at a later date, came into contact with this genre of Persian texts.<sup>81</sup> The influence of this trend of studies on the medical culture of Iran is evident in the *Ḥulāṣat al-tajārib* of Bahā' al-Dawla Nūrbaḥšī, a medical handbook written in 907/1501–2 in a village near the old city of Ray (nowadays Tehran) which discusses many treatments associated with Indian physicians.<sup>82</sup> This is also visible in Mīr Mu'min Ḥusaynī Tunakābunī's *Tuḥfat al-mu'minīn*, a Persian pharmacopeia dedicated to the Safavid ruler Šāh Sulaymān (r. 1666-1694). Mīr Mu'min quotes several Indian sources in the bibliography provided in the preface of his treatise.<sup>83</sup>

Other elements, such as the fact that these Persian works on Āyurveda do not seem to have been the object of major translations into Arabic or other languages of the Western Muslim world, could suggest that they played a more limited role beyond the context in which they were produced and certain parts of the surrounding Persian speaking world. The main purpose behind the writing of this genre of texts—the adaptation of the practices of Avicennian physicians to the Indian context—can suggest that they would not have been particularly useful to physicians practicing in other regions of the Muslim world. The *Ta'līf-i Šarīfī* by Muḥammad Šarīf Ḥān was probably better known to British doctors who served in Colonial India, thanks to the English adaptation by George Playfair,<sup>84</sup> than to Muslim scholars in Cairo or Istanbul. The main languages into which the Persian sources on Indian sciences and other subjects were translated were not Arabic or Turkish, but Urdu and English, or in other words the languages that reflected the need to circulate these materials in the intellectual environment of South Asia during the Colonial period.

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<sup>80</sup> Speziale 2010b: 433-435.

<sup>81</sup> On these physicians see Hameed 1986, see also Speziale 2009.

<sup>82</sup> Bahā' al-Dawla Nūrbaḥšī, 1893, see also Speziale 2019: 30.

<sup>83</sup> Among them Suśruta's work, Mīr Mu'min Ḥusaynī 1376 š./1997: 5; Richter-Bernburg 1978: 130-131. Rieu writes that "his acquaintance with the medical works and the simples of India shows that he had been living a considerable time in that country," Rieu 1881: 477b. However, the Indian sources from the Mughal period do not mention him among the Iranian physicians who migrated to India. In the *Ta'līf-i Šarīfī*, Muḥammad Šarīf Ḥān remarks that Mīr Mu'min's description of *imlī* (*Tamarindus indica*) seems to indicate that he had never seen this plant, Šarīf Ḥān 1280/1863: 24.

<sup>84</sup> Published in 1833 in Calcutta, by the Medical and Physical Society of Calcutta, under the title *The Taleef Shereef or Indian Materia Medica*.

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