

# *Didactic poems on medicine and their commentaries in medieval al-Andalus and Western Islam<sup>1</sup>*

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**ABSTRACT:** Little is known about the didactic poetry on the sciences produced in al-Andalus and the Maghrib until the 15th century. The genre flourished from the 12th century onwards, possibly due to the influence of the famous *Urjūza fī l-ṭibb* by Ibn Sīnā. The *Urjūza* was commented upon by Ibn Ruṣhd and Ibn Ṭumlūs and reached a wide readership thanks to the scholars of al-Andalus; they also wrote other poems on medicine and the sciences for a learned public, and possibly also for future physicians. The article pieces together and analyses a large body of evidence from the primary and secondary bibliography in order to give a general description of the genre and its influence in the transmission and teaching of medicine in the Almohad, Nasrid, Marinid and Ḥafsid societies.

**KEYWORDS:** Medicine, science, didactic poetry, commentary, al-Andalus.

## I. INTRODUCTION

A general study of Arabic didactic poetry is a difficult task since the number of authors, texts, disciplines, epochs and contexts that would have to be included is little less than overwhelming.<sup>2</sup> For this reason, research in this field tends to study

1. This article is based on two previous studies by the author. The first is a paper delivered at the IV International Congress of Fez on the History of Medicine in Muslim Heritage & the VII Congress of the International Society of Islamic Medicine (Fez, 2016). The paper was published in part in the congress proceedings. The second is a research project entitled *Las ciencias de los antiguos en verso y prosa: los comentarios a la Urjūza fī l-ṭibb de Ibn Sīnā en al-Andalus y el Maghrib entre los siglos VII/XII y IX/XV*, presented in public and registered at the Faculty of Philology of the University of Barcelona on 14 February 2020.

2. For an introduction to the subject, cf. Ullmann 1966, Khulūṣī 1990, Van Gelder 1991 and 2011; cf. moreover Burnett 2001 on the transmission of Arabic didactic poetry to Europe.

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specific works or deals with didactic poems as a secondary aspect of broader ranging subjects. Considered in itself, however, Arabic didactic poetry is a vast and diverse corpus that needs to be analysed at several levels of complexity due to the multifarious factors that contributed to its creation, development and diffusion.<sup>3</sup> The following pages aim to provide insights into several aspects of Arabic didactic poetry by dealing, on the one hand, with one of the most interesting subclasses of this genre, didactic poems on scientific disciplines, and on the other, with an interesting phenomenon that emerged in a precise cultural area of Islam: the flourishing in al-Andalus of poetry on medicine and scientific subjects (and of the commentaries on the poems), particularly from the 12th century onwards, and its projection to the Maghrib.<sup>4</sup>

## 2. EARLY DIDACTIC POEMS ON THE SCIENCES IN AL-ANDALUS

Although there are few examples of didactic poetry on science in al-Andalus before the 12th century, the genre was by no means non-existent prior to that time. The origin was Baghdad where, around the turn of the 9th century, coupled *rajaz* became popular not just among the «modernist poets» of Baghdad but also among

3. As an example of a complex approach to didactic poetry, cf. Sobieroj 2016.

4. For a full overview of the works of didactic poetry produced in al-Andalus, the reader may consult the main biobibliographical repertoires of the al-Andalus literary tradition, Fierro 2014a and Lirola and Puerta Vélchez 2004-2012. We lack similar studies on the authors from the Maghrib. However, Lamrabet 2014 provides an exhaustive bibliography of mathematical and astronomical treatises, which also contains helpful references to medicine. The books on the history of medicine in the Maghrib, like al-Ganūnī 2013, provide a helpful guide that may be complemented with more general repertoires. Although a history of didactic poetry in al-Andalus is beyond the scope of the present article, there is a general factor which deserves to be noted. The systematic analyses of Fierro 2014a and Lirola and Puerta Vélchez 2004-2012 yield a quantitative and temporal pattern which underlies the development of the genre: from the late 8th century to the 10th, the number of didactic poems on any subject is extremely scarce; during the 11th century the number of texts increases, although there are hardly any works on scientific subjects; coinciding with the reception of Ibn Sīnā's *Urjūza fī l-tibb*, the number of poems and commentaries on all subjects, and in particular on science and medicine, grows significantly; between the 13th and the 15th centuries, there is a sustained rise in the number of didactic poems on all subjects. This pattern applies to texts on medicine and the mathematical sciences from the Maghrib.

scholars, who wrote poems devoted to the explanation of learned subjects.<sup>5</sup> In this context, *Urjūza fī l-ḥudūd* (Poem on the terms [of the houses of zodiac]) by the famous astronomer al-Fazārī (d. early 9th century) is one of the earliest examples of the use of the *rajaz* for the transmission of science.<sup>6</sup> Didactic poetry appears in al-Andalus as early as the first half of the 9th century, in an intellectual context strongly characterised by the imitation of literary and cultural models from Baghdad, which were deliberately diffused in Umayyad Cordova by the emirs al-Ḥakam I (r. 796-822) and ‘Abd al-Raḥmān II (822-852).<sup>7</sup> Two of these rulers’ courtiers wrote poetry on matters that are akin to the sciences and philosophy. The astrologer al-Ḍabbī (d. after 852) composed an *urjūza*, which is partially preserved in a 15th century treatise, about an astrological technique for casting horoscopes inherited from the Latin cultural substrate of the Iberian Peninsula.<sup>8</sup> The poet, astrologer, ambassador and alleged philosopher, Yaḥyā al-Ghazāl (d. 866), wrote an *urjūza* on destiny that has not survived in which he approached this issue according to the ideas of the philosophised theology (*kalām*) that flourished in Baghdad in the same period.<sup>9</sup> The real purpose of these *urjūzas* is unknown but there is no doubt that they served the cultural interests of the court very well. The emir ‘Abd al-Raḥmān II had developed a profound belief in astrology while still a prince; he had imported many books on the rational sciences from Baghdad and had spread the knowledge they contained among the Cordovans. It is possible that his aim was not just to raise his courtiers’ awareness of science and philosophy but also to diffuse some kind of rationalistic spirit among the learned elites, much as al-Ma’mūn was doing in Abbasid Baghdad.<sup>10</sup> In this context, then, these didactic poems may have served the cultural and political purposes of the dynasty.

5. Ullmann 1966, 46-55.

6. See Burnett 2001, 42-43, from whom I borrow the translation of the title. It is worth noting that the poem deals with astronomy and astrology. Although the status of astrology as a science was subject to much debate, the authors who are mentioned in the present article as authors of poems of astrology like al-Fazārī and al-Ḍabbī lived and worked in cultural milieus in which the scientific nature of astrology was generally accepted.

7. Forcada 2004-5, 8-12.

8. Samsó 2001, 659-660; cf. also the bibliography mentioned on p. 660, notes 9 and 10.

9. Forcada 2004-5, 40 ff. What has come down to us from this author is a poem on the soul written in a *qarīd* metre. The author does not impart knowledge but poses many relevant questions with theological implications.

10. Forcada 2017, 58-60.

The importance of didactic poetry in the transition from the 3rd/9th to the 4th/10th century may be seen in *al-'Iqd al-farīd* of Ibn 'Abd al-Rabbih (246/860-328/940). The work is a treatise on *adab* which as a result includes a wide range of subjects that a learned courtier should know. In tune with this didactic aim, the work contains several didactic poems and, interestingly, a poem on the care of one's health<sup>11</sup> written by Faraj ibn Sallām, a disciple of the Baghdadi master of the *adab*, al-Jāhiz (d. 869).<sup>12</sup> The author is above all a literary writer who knew some medicine. The poem is found in a subsection of *al-'Iqd* devoted to medicine which shows the integration of medicine, and especially diet, in the collective elite culture of Ummayyad Cordova.<sup>13</sup> Apart from this work there is another didactic poem worthy of note in 10th century al-Andalus. Ibn 'Abd al-Rabbihi's nephew, the physician Sa'īd ibn 'Abd Rabbihi (d. 953-4 or 966-7) wrote the first *urjūza* on medicine ever composed in al-Andalus, usually known as *Urjūza fī l-ṭibb*.<sup>14</sup> The work was dedicated to the caliph 'Abd al-Raḥmān III and may have been written in the 930s.<sup>15</sup> The author was a doctor to Cordoba's aristocracy, who enjoyed a fine reputation as a physician and scholar.<sup>16</sup> His poem was still well known in the 11th century, when Ṣā'id al-Andalusī, a famous biographer of the sciences, said of him that: «he wrote an excellent *rajaz* about medicine which dealt with a good part of this matter and showed the author's mastery of the subject and his exact knowledge of the methods of the ancients». <sup>17</sup> In spite of Ṣā'id's praise, the *urjūza* is by no means a thorough summary of medicine. Compared to Ibn Sīnā's *Urjūza fī l-ṭibb*, the unsurpassed masterwork of Araboislamic didactical poetry about medicine (cf. the next section of this article), Sa'īd ibn 'Abd Rabbihi's poem is superficial, incomplete and unsystematic.<sup>18</sup> We do not know the poem's intended readership, but it does not seem to have been written for physicians or students of medicine. At a court in which the scientific subjects had become relatively popular in the mid 10th cen-

11. Ibn 'Abd Rabbihi, *al-'Iqd al-Farīd*, 7, 306-10.

12. Ibn Ḥayyān, *Muqtabis* 2/2, 162-4; Ibn al-Faraḍī, *Tārīkh*, II, 588, number 1035.

13. On this section of medicine, cf. Forcada, forthcoming.

14. The work is edited, studied and translated into Spanish in Kuhne 1980.

15. Kuhne 1980, 298.

16. On this author, cf. Kuhne 2012.

17. Ṣā'id al-Andalusī, *K. Ṭabaqāt al-umam*, 187. Renaud (1931, 212 n. 3) says that there is a quotation of this poem in a book written in the 16th century, al-Ghassānī's commentary of Ibn 'Azrūn's *Tadhīl* (cf. below about this book).

18. Kuhne 1980, 295-6.

tury, we may suppose that his poem would have been read by the members of the learned men who surrounded the caliph and wanted to add some medical lore to their general culture. Sa'īd ibn 'Abd Rabbihi's *Urjūza fī l-ṭibb* was not followed by any similar work. For reasons that are unknown, the didactic poetry on medicine and scientific subjects declined in the 11th century and reappeared only when Ibn Sīnā's *Urjūza fī l-ṭibb* began to be known in al-Andalus.

### 3. IBN SĪNĀ'S URJŪZA FĪ L-ṬIBB IN 12TH CENTURY AL-ĀNDALUS

#### 3.1. The early diffusion of Ibn Sīnā's poem

As is well known, Ibn Sīnā wrote nine didactic poems on medicine<sup>19</sup> most of which remain unedited and unstudied. The most important of them is *Urjūza fī l-ṭibb*, which will be the only poem on medicine by Ibn Sīnā mentioned in the following pages.<sup>20</sup> In spite of its intrinsic importance the poem remains largely unstudied. In the introduction to the work,<sup>21</sup> we read that Ibn Sīnā dedicates it to a minister because, in the past, the greatest scholars wrote poems on the sciences, and most particularly on medicine, for kings and notables. The author goes on to say that, in Persia, medicine is no longer discussed and commented in learned circles, hospitals and madrasas, and is in the hands of ignorant people who are poorly trained in the matter. The purpose of the *Urjūza* would thus be the promotion of the knowledge of medicine among the learned elites but not the education of future physicians. The reasons for the success of the *Urjūza* are not studied, but it is probably to do with the expressivity of the verses and the author's capacity for synthesis, as he condenses Arabo-islamic medicine in roughly 1300 verses. Even though some sources suggest that the *Urjūza* was read as an introduction to Ibn Sīnā's *Qānūn*, the two works are qualitatively different, as Danielle Jacquart remarked.<sup>22</sup>

19. Gutas 2014, 521-522.

20. A general approach to Ibn Sīnā's *Urjūza* may be found in Rabie 2014 and in the prefaces to the two main editions of the work, Jahier and Nouredine 1956 and al-Baba 1984, 89-194. This latter work contains (pp. 195-206) the edition of another medical poem by Ibn Sīnā, *Urjūzat tadbīr al-fuḥūl fī l-fuṣūl*, on diet. Further insights into Ibn Sīnā's medical poetry may be found in Kuhne's edition of *Urjūza fī waṣāyā Abuqrāṭ*, on the prognosis of terminal patients (Kuhne 1987).

21. Ibn Sīnā, *Urjūza*, ed. al-Bābā, 89.

22. Jacquart 2003, 273.

The *Urjūza* seems to be based on an introductory work to medicine—Ḥunayn's *Masā'il fī l-ṭibb*—and therefore versifies the academic medicine that was current before the appearance of Ibn Sīnā's *Qānūn*. In this latter work, Ibn Sīnā presented a more philosophized medicine that contained several criticisms of Galen. Probably the fame of Ibn Sīnā, and the reputation that the *Qānūn* gradually gained as the most important manual of medicine, contributed to the popularity of the *Urjūza*. However, the work is by no means easy and a reader who was not yet a physician needed the explanations of a teacher. For this reason, Ibn Sīnā's *Urjūza* was regularly commented upon over time, particularly in the Maghrib.<sup>23</sup>

Ibn Sīnā's medical poem appeared in al-Andalus several decades after the author's death. During the 11th century, the flow of scientific sources from the Mashriq to al-Andalus fell off considerably in comparison with the previous century.<sup>24</sup> The earliest testimony of Ibn Sīnā's *Urjūza* in al-Andalus was considered to be the poem entitled *Tadhīl Urjūzat Ibn Sīnā* («Addition to Ibn Sīnā's *urjūza*»), written by Ibn 'Azrūn.<sup>25</sup> The author is an obscure author of Jewish origin who lived between the 11th and the 12th centuries who wrote *Tadhīl* in order to complement the section on fevers and tumours in Ibn Sīnā's poem. However, the date of this work is most uncertain.<sup>26</sup> Although *Tadhīl* was commented upon three times in the Maghrib from the 14th century onwards, as we will see below, it does not seem to have found a wide circulation in al-Andalus. The first Andalusī commentary of Ibn Sīnā's *Urjūza* was written by 'Abd al-Raḥmān ibn Abī Jum'a ibn Qāsim al-Ḥakīm al-Qaysī,<sup>27</sup> who may have died in the mid-12th cen-

23. For a list of these commentaries, cf. al-Ḥabashī 2017, I, 137-138. An updated list of the commentaries written in al-Andalus and the Maghrib between the 12th and the 15th centuries will be given as an appendix of this article. It should be studied why the number of commentaries is considerable inferior in Eastern Islam.

24. Samsó 2015, 118-119.

25. Renaud 1931, 209 ff; cf. moreover al-Khaṭṭābī 1988, I, 53, Garijo 2012 and the edition of the work by Qāsim Muḥammad (2001).

26. Ibn 'Azrūn's *Tadhīl* was copied and slightly modified by a scholar who lived in 12th-century Murcia named Muḥammad ibn 'Abd al-Salām al-Mursī. This author was identified by Steinschneider as Muḥammad ibn 'Abd al-Salām al-Murdī, who died in 1168-9 (Renaud 1931, 212). This identification is one of the main arguments for hypothesising that Ibn 'Azrūn lived between the 11th and the 12th centuries. It should therefore be noted that we do not know for sure when Ibn 'Azrūn and Muḥammad ibn 'Abd al-Salām al-Mursī lived. In addition, al-Mannūnī (1982, 132) gives good reasons to believe that *Tadhīl* was written after the commentary of Ibn Rushd to Ibn Sīnā's *Urjūza*.

27. Al-Mannūnī 1982, 132.

tury. The work, partially preserved in a single manuscript, remains unedited and unstudied.

The influence of Ibn Sīnā's poem spread from Seville, the most important city in 12th century al-Andalus, and from the physicians in the service of the Almoravids and Almohads, who were the focus of the medical activity in Western Islam.<sup>28</sup> Abū Marwān ibn Zuhr (d. 1162), who worked in the service of both dynasties, was the first to appreciate Ibn Sīnā's poem, saying that it contained all the principles of the science and was preferable to a full collection of books.<sup>29</sup> Ibn Rushd (d. 1198) and his disciple Ibn Ṭumlūs (d. 1223) expressed similar admiration.

### 3.2. *The commentaries of Ibn Rushd and Ibn Ṭumlūs*

Ibn Rushd wrote his commentary at the request of the Almohad court. However, he had indirectly suggested the need for the commentary, extolling the poem to a large extent in the same terms as those used by Ibn Zuhr<sup>30</sup> at a session of the *majlis 'alī* of Abū l-Rabī' Sulaymān ibn 'Abd al-Mu'min (m. 604/1207). This latter was a *sayyid*, a descendent of the first Almohad caliph 'Abd al-Mu'min, who governed several cities of the Maghrib and was a notable man of letters of his time.<sup>31</sup> The expression *majlis 'alī* may allude to a meeting of a political organism of the Almohad state, but it seems to designate one of the sessions organized by the Almohad aris-

28. As is well known, al-Andalus was ruled as part of a larger Maghribī empire by the Almoravids during the first half of the 12th century and by the Almohads during the second.

29. Leclerc 1876, 1, 473. The source of this statement is the commentary of Ibn Sīnā's *Urjūza fī l-ṭibb* written by the Maghribi physician Muḥammad ibn Isma'īl ibn Muḥammad al-Mutaṭabbib (d. after. 1-1580/988), *al-Tawfīq li-l-ṭabīb al-shaqīq*. According to Forcada 2012, 164-169, there is further, yet indirect, evidence of the fact that Ibn Zuhr knew Ibn Sīnā's poem. In order to harden the skin of the new-born babies, Ibn Zuhr prescribed an innovative treatment: anointing them with acorn oil. Now, the only source that mentions something similar is Ibn Sīnā's poem (verse 938), which says that the babies should be anointed with «astringent oil» (acorn has astringent properties). Interestingly, whereas Ibn Rushd's commentary of Ibn Sīnā's poem does not mention Ibn Zuhr's treatment, Ibn Ṭumlūs quotes it borrowing in his commentary from Ibn Rushd's *K. al-Kulliyāt*.

30. Ibn Rushd, *Sharḥ Urjūzat Ibn Sīnā*, ed. Coullaut et al. 2010 (henceforth *Sharḥ*), 44/423. This suggests two possibilities: either the words of Ibn Rushd were put in the mouth of Ibn Zuhr, or Ibn Rushd repeated what Ibn Zuhr had said. According to the complementary evidence seen in the previous note, I tend to believe that the second option is more probable.

31. Haremska 2012.

tocrats with several types of scholars in order to educate the elites.<sup>32</sup> The commentary was written in 1180, according to a date extant in one of its manuscripts.<sup>33</sup> It was not addressed to beginners, since the reader needed some knowledge of medicine and natural philosophy. This suggests two possibilities that are by no means mutually exclusive: the commentary may have been written for physicians and scholars who had a philosophical culture, or alternatively for the Almohad courtiers, since they possessed this culture after twenty years of being governed by Abū Ya'qūb Yūsuf, the caliph who, as is well known, ordered Ibn Rushd to produce a systematic commentary of Aristotle. The commentary dates from slightly before the final period of Ibn Rushd's career (1184-1195), when he wrote the *tafsīr*, pl. *tafāsīr* (commentaries, a synonym of *sharḥ*, pl. *shurūḥ*). These commentaries are similar to *Sharḥ Urjūzat Ibn Sīnā*: the author reproduces the original text and interpolates a thorough explanation that summarizes the knowledge and experience of a mature scholar. In *Sharḥ Urjūzat Ibn Sīnā*, Ibn Rushd reproduces the original text and interrupts it with commentaries whenever he deems it necessary. Some of these commentaries are merely instrumental and explanatory but others are profound and far-reaching. The *Sharḥ* gives Ibn Rushd the opportunity to qualify previously expressed opinions, particularly in *al-Kulliyāt fī l-ṭibb*, and also to address new issues. Even though a thorough study of Ibn Rushd *Sharḥ* is beyond the scope of the present article, we can give a preliminary appraisal of it on the basis of the subjects dealt with in these comments:

- (1) Epistemology. In the initial sections of the work Ibn Rushd deals at length with the status of medicine as science or art.<sup>34</sup> Although in *Kitāb al-Kulliyāt* he followed al-Fārābī's definition of medicine as «productive art» (*ṣinā'a fā'ila*), in the *Sharḥ Urjūzat Ibn Sīnā* he appears to have adopted the definition of medicine as a science extant in Ibn Sīnā's *Qānūn*. What Ibn Rushd actually does in *Sharḥ Urjūzat Ibn Sīnā* is to summarize the conceptions of several works including Ḥunayn ibn Ishāq's *Masā'il fī l-ṭibb*, Ibn Sīnā's *Qānūn fī l-ṭibb*, and al-Fārābī's works on Aristotle's logic in order to give a detailed analysis of the status of medicine. The conclusion is consistent with the initial definition given in *K. al-Kulliyāt* in that it concludes that

32. Al-Mannūnī 1989, 30-32.

33. Al-'Alawī 1986, 99.

34. Ibn Rushd, *Sharḥ*, 46-50; cf. an analysis of this section in Forcada, forthcoming 2; as for the echo of this debates in Medieval Europe, cf. Mc Vaughn 1990.

medicine, regardless of its status as science or art, is an eminently empirical and practical discipline.

- (2) Natural philosophy. Ibn Rushd discusses several points in which his opinion differs from Galen and Ibn Sīnā. The most salient are the number of human complexions and the discussion between Aristotle's cardiocentrism and Galen's cerebrocentrism. In *On complexions*, Galen opposed the opinion of Aristotle about the existence of nine complexions,<sup>35</sup> while Ibn Sīnā said that there were sixteen.<sup>36</sup> Ibn Rushd says in *Kulliyāt*<sup>37</sup> that there are just four,<sup>38</sup> and refutes the existence of a balanced complexion even though this is admitted by Galen and Aristotle alike. Instead of this, he postulates an odd fifth complexion defined according to the mutual relations of the parts of the body.<sup>39</sup> Ibn Sīnā addresses the issue in verses 35 ff, but only superficially and not particularly clearly, omitting his own doctrine expounded in the *Qānūn* and admitting the balanced complexion that he had refuted in the *Qānūn*. For this reason, Ibn Rushd's commentary expands the question in a long gloss in which he criticizes Ibn Sīnā for accepting the fifth complexion. He also indirectly refutes Ibn Sīnā's doctrine of the nine complexions and concludes that there are actually four.<sup>40</sup> Interestingly, Ibn Rushd omits the fifth complexion that he postulated in *Kulliyāt*.

As is well known, Aristotle held that the heart was the ruling organ of the body, the site of the soul, the organ responsible for sensation, locomotion and reproduction, and the origin of the arteries, veins and arteries. Ba-

35. Hankinson 2008, 219-20; Four are defined according to the essential qualities, hot, cold, moist and dry; four others according to pairs of complementary qualities, hot/moist, hot/dry, cold/moist, cold/dry; the ninth is a complexion in which the four qualities are in perfect equilibrium, which is also admitted by Aristotle.

36. Ibn Sīnā, *Qānūn, kitāb I, fann I, ta'lim III*; cf. Ottosson, *Scholastic Medicine*, 135-8.

37. Ibn Rushd, *Kulliyāt*, 161-8 and 213-214. On Ibn Rushd on complexions, cf. Torre 1974, 156-60; for a general study on the doctrines of Galen, Ibn Sīnā e Ibn Rushd, cf. Ottosson 1984, 129 ff.

38. Those defined by the pairs of complementary qualities.

39. Torre (1974, 159) suggests that Ibn Rushd mentions this fifth complexion in order to make coincide the number of complexions with the number given by Aristotle because he has previously refuted the balanced mixture.

40. Even though Ottosson (1984, 138 n. 40) said that it is unclear according to the Latin translation of the commentary whether Ibn Rushd finally says that there are four or eight complexions, the Arabic text gives no room for doubt; cf. Ibn Rushd, *Sharḥ*, 62-63.

sing himself on an improved knowledge of anatomy, Galen said that the brain is the origin of the nerves and the centre of sensation and knowledge. Ibn Sīnā followed Aristotle even though his cardiocentrism was nuanced by the influence of Galen's anatomy.<sup>41</sup> Ibn Rushd accepted Aristotle's cardiocentrism.<sup>42</sup> In *Urjūza fī l-ṭibb*, Ibn Sīnā avoids the central question and expresses eclectic views. In verse 100 he says that the brain is the organ that cools the body, an Aristotelian assumption; in verse 101, he says that the testicles are (together with the nerves) the organs of reproduction, which is a Galenic contention. Ibn Rushd explains that Aristotle says that the heart is responsible for reproduction,<sup>43</sup> adducing Aristotle's argument of the castrated bull that is nevertheless able to procreate (*History of Animals*, 632a15). In general, Ibn Rushd affirms Aristotle's cardiocentrism as much as possible in many short glosses in which the author criticized is Galen rather than Ibn Sīnā.<sup>44</sup>

- (3) Mixed subjects. Other subjects addressed by Ibn Rushd are to do with both method and natural philosophy. The most important is the treatment of astronomy and astrology. Ibn Rushd and Ibn Sīnā, and in general, the Aristotelian philosophers,<sup>45</sup> denied the scientificity of astrology. Galen, although sceptical about astrology, incorporated it in *On Critical days* in order to explain the influence of the planets on the critical moments of the course of a disease.<sup>46</sup> In *Qānūn*<sup>47</sup> Ibn Sīnā avoids Galen's approach to the critical days, possibly because of his reticence towards astrology. He considers Galen's references to the influence of the moon here as contextual information and says that the critical days must be dealt with according to natural philosophy and the experience of the physician. However, Ibn Sīnā includes a subsection about the critical days in *Urjūza fī l-ṭibb* (vv.646 ff.) in which there are two verses that have an astrological tone:

41. Musallam 2011.

42. Torre 1974, 151-5 and 182-4.

43. Ibn Rushd, *Sharḥ*, 94-96.

44. Ibn Rushd, *Sharḥ*: v. 107, 98 on pneumas; v. 116, 102 on nutrition; v. 120, 104 on pulse; v. 163, 118, again on nutrition.

45. Forcada 2015, 167-170.

46. Toomer 1985; Cooper 2011a.

47. Ibn Sīnā, *Qānūn*, *kitāb* IV, *fann* II. Cf. Cooper 2011b, 50.

653. If the moon remains in a favourable aspect, the sick will live a long life.

654. But if it remains in an unfavourable aspect, he will die and his life will finish.

The influence of the stars on the human body is a tenet accepted by all the scholars of Antiquity and so it is difficult to differentiate between this general influence and a more specific influence of the planets deriving from astrology. Ibn Rushd says that Ibn Sīnā goes beyond what it is admissible in natural philosophy and tries to explain the distinction between the influence of the moon on the tides from the influence of a moon in a good or bad aspect, and concludes by saying that astrology is a «weak» art whose content is mostly false.<sup>48</sup> A similar commentary appears on the purpose of two verses (vs. 136-137) which say that unlucky planets in their exaltation indicate death, whereas lucky stars in their exaltation indicate good health.<sup>49</sup>

The commentary by Ibn Ṭumlūs, also known as *Sharḥ Urjūzat Ibn Sīnā*, has not been edited and to date remains virtually unstudied.<sup>50</sup> It is difficult to discern which of the two commentaries was written first. The best argument for the priority of Ibn Ṭumlūs is that, even though he quotes abundantly from Ibn Rushd's *Kitāb al-Kulliyāt*, written between 1161 and 1169,<sup>51</sup> he does not mention his commentary on Ibn Sīnā's *Urjūza*.<sup>52</sup> The best argument for the contrary position is that in the introduction to his commentary Ibn Ṭumlūs extols Ibn Rushd and refers to him as *raḍīya Allāhu 'an-hu*, «may God be satisfied with him» which is usually said of someone who has passed away.<sup>53</sup> Other contextual elements are of little help. The iden-

48. Ibn Rushd, *Sharḥ*, 246-8.

49. Ibn Rushd, *Sharḥ*, 110.

50. Cf. Nevertheless al-Khaṭṭābī 1988, I, 421-441, that contains some fragments of the work, and Elamrani-Jamal 1997, which translates into French a part of the introduction. On the author, cf. Ben Aḥmed 2019, I ff, where it is given (p.8) a most complete list of the manuscripts of Ibn Ṭumlūs' commentary.

51. Álvarez de Morales and Vázquez de Benito 2001, 96-97 and 103 ff., rejecting a posterior revision of the work by Ibn Rushd. Since it is usually said in the biographies of Ibn Ṭumlūs that he was born ca. 1050, this would imply that he wrote the commentary between 1070 and 1080.

52. Only a critical edition of the text will reveal if Ibn Ṭumlūs borrowed from Ibn Rushd's commentary. However, there are sections of Ibn Ṭumlūs' commentary which are intended for criticising Ibn Rushd's commentary; cf. below n. 63.

53. Elamrani-Jamal 1997, 467-470.

tity of the member of the Almohad aristocracy to whom Ibn Ṭumlūs dedicates the commentary, Abū Yaḥyā ibn Abī Ya'qūb Yūsuf ibn Sulaymān,<sup>54</sup> is not decisive because he belongs roughly to the same generation as the prince for whom Ibn Rushd wrote his commentary. The reasons that Ibn Ṭumlūs gives in the introduction of the commentary for dedicating it to Abū Yaḥyā ibn Abī Ya'qūb Yūsuf ibn Sulaymān shed little light on the question of which commentary came first: Ibn Rushd had spoken very well of the human qualities of the Almohad aristocrat, and the latter was interested in medicine. Ibn Tūmart says moreover that he wanted to emulate Ibn Sīnā, who had written the poem for a learned minister of the court.<sup>55</sup> All in all, I tend to think that Ibn Ṭumlūs' commentary is later than Ibn Rushd's. It is difficult to believe that a young disciple of Ibn Rushd could have written — while his master was still alive — a commentary that depended so much on Ibn Sīnā's *Qānūn*, and in which Ibn Ṭumlūs held opinions that contradicted his mentor in delicate subjects

54. We lack information on this man; on his father, Abū Ya'qūb Yūsuf ibn Sulaymān al-Tīnmallālī, cf. Renaud 1931, 207, n. 4 and Elamrani-Jamal 1997, 468-9. He was one of the first followers of the founder of Almohadism Ibn Tūmart (d. 1130), and so he was a young man when the Almohad movement started, in the early 1120s. The best approach to the date of his death is given by Ibn Khaldūn, *Ibar*, 6, 228. The caliph 'Abd al-Mu'min (d. 1163), in his old days, tells his son, the future caliph Abū Ya'qūb Yūsuf (d. 1184) that only two companions (*aṣḥāb*) of Ibn Tūmart are still alive: Abū Ḥafs (the future founder of the Ḥafsid dynasty of Tunis) and Yūsuf ibn Sulaymān. About Yūsuf ibn Sulaymān, the caliph says that the prince Abū Ya'qūb Yūsuf should send him to al-Andalus so as to get rid of him. This means that the «father» Yūsuf ibn Sulaymān al-Tīnmallālī was a mature man but still active in the late 1150s. The «son», therefore, could have been engendered approximately between the late 1100s and the early 1160s. The identity of «the father» explains why Ibn Ṭumlūs extols Ibn Tūmart in the introduction of the commentary: it was dedicated to the son of a member of Ibn Tūmart's «old ward». Ibn Ṭumlūs praises the companions of Ibn Tūmart and qualifies him with the epithets that were applied to him in order to express a belief in his sanctity: «*ma'ṣūm*» and «*ma'lūm*» («infallible», «acknowledged»). Both adjectives convey the same meaning as «impeccability», *iṣma* (García Arenal 2006, 180-181). This could be taken as a sign of an early writing of Ibn Ṭumlūs' commentary (Elamrani-Jamal 1997, 469 n. 21), since the caliph Ya'qūb al-Manṣūr (r. 1184-1199) began to question the impeccability of Ibn Tūmart. The argument is nevertheless inconclusive according to Fierro (1997, 448): al-Manṣūr never rejected the religiopolitical ideology of Ibn Tūmart; the Almohads abandoned the symbolic guidance of Ibn Tūmart's doctrines in 1227, under the caliphate of Abū l-Ūlā al-Ma'mūn, four years after the death of Ibn Ṭumlūs.

55. Other reasons given by the author are similar to those that Ibn Rushd adduces in his commentary: the versified text needs further clarification in order to be fully understood.

like cardiocentrism or astrology.<sup>56</sup> It is more likely that Ibn Ṭumlūs wrote it many years after Ibn Rushd's death, when few people at court would have remembered Ibn Rushd's commentary. Why did Ibn Ṭumlūs not mention the work of his master? On the one hand, Ibn Rushd's commentary would have devaluated Ibn Ṭumlūs's commentary in the eyes of his patron. On the other, it was unnecessary: Ibn Rushd's *Kulliyāt* and Ibn Sīnā's *Qānūn* contained enough references in order to make a commentary on Ibn Sīnā's poem. Be this as it may, the question of which commentary appeared first is irrelevant, since the two works are complementary. Ibn Ṭumlūs analyses the full text as a whole,<sup>57</sup> including the numerous sections that Ibn Rushd does not comment on or comments on only superficially because he considers the subjects to be self-evident (*bayyin bi-nafsi-hi*).<sup>58</sup> Ibn Ṭumlūs' commentary follows the sections into which Ibn Sīnā's *Urjūza* is divided, even though Ibn Ṭumlūs, on occasion, merges two sections or divides one section into two. The methodology of the commentary is clear and quite systematic. Ibn Ṭumlūs borrows heavily from Ibn Sīnā's *Qānūn*, quoting verbatim the phrases that extract the essence of the subject under discussion. Less frequently, he includes sentences and ideas from Ibn Rushd's *Kulliyāt*.<sup>59</sup> Ibn Ṭumlūs does not mention the origin of these quotes, with one exception: the treatment for hardening babies' skin in which he mentions a procedure invented by Abū Marwān Ibn Zuhr which is mentioned in Ibn Rushd's *Kulliyāt*.<sup>60</sup> Besides this, Abū Marwān Ibn Zuhr is mentioned explicitly once again, also on the

56. On Ibn Ṭumlūs' rejection of cardiocentrism; cf. the commentary of vs. 96-102, section, *al-rābīṭ min al-ṭabī'iyyāt wa-huwa al-a'ḍā*, according to the following mss. of Ibn Ṭumlūs's *Sharḥ*: Wazzān 1626, 10r-11r, National Library of Tunis 16.133, 13r-14r, Royal Library of Rabat 1014, 11-12 and Zāwiyya Hamzawiyya, 121/1885, 19-21 and 174/1892, 28-32. Ibn Ṭumlūs says explicitly that the brain is the origin of motion and sensation. On Ibn Ṭumlūs and astrology, cf. below in this article.

57. However, Ibn Ṭumlūs does not comment Ibn Sīnā's introduction unlike Ibn Rushd.

58. Cf. particularly Ibn Rushd, *Sharḥ*, 162 y 164, vss. 301-9; 172, vss. 336-8; 196, vss. 425-435; 214, v. 504; 220, vss. 525-35; 316, vss. 935-936; 320, vss. 953-4, 376, vss. 1168-76.

59. Significantly, Ibn Ṭumlūs says the definition of medicine extant in *Kulliyāt* is the best of all definitions. He contrasts it with Ibn Sīnā's definition in *Qānūn and Urjūza*. Ibn Ṭumlūs does not mention neither the author nor the book from which he borrows. Cf. Ibn Ṭumlūs, *Sharḥ*, mss. Wazzān 1626, 2v, National Library of Tunis 16.133, 3r, Royal Library of Rabat 1014, 3, Zāwiyya Hamzawiyya 121/1885, 4, Zāwiyya Hamzawiyya 174/1892, 6.

60. Cf. Ibn Ṭumlūs, *Sharḥ*, ms. Royal Library of Rabat 1014, 135 and n. 28 above.

subject of children, and again quoting from Ibn Rushd's book.<sup>61</sup> Ibn Ṭumlūs does not explicitly mention any authors other than Ibn Sīnā and Aristotle; there are general references to the «philosophers» and «the method of the physicians».

Ibn Ṭumlūs inserts these foreign materials into a personal text in order to produce a pedagogical explanation of the poem that includes occasional references to his own experience<sup>62</sup> and his own science. Interestingly, one of the chapters in which the author deals most personally with the subject is the section on critical days, where he comments at length on the astrological aspects of the question, speaking positively about the opinions of the astrologers about the influence of the good and bad aspects of the moon.<sup>63</sup> At the end of this commentary, Ibn Ṭumlūs says that he has written a short tract (*maqāla*) on the critical days, which unfortunately has not come down to us. Ibn Ṭumlūs's commentary may therefore be considered as an introduction to Galenic medicine and, to some extent, to the reading of Ibn Sīnā's *Qānūn*. The work was appreciated in later times since Ibn Muḥannā (fl. end of 14th century) states in his own commentary on Ibn Sīnā's *Urjūza* that someone had written a synthesis (*muqtaḍab*) of the commentaries of Ibn Rushd and Ibn Ṭumlūs.<sup>64</sup> It also seems that the two commentaries stimulated other authors to carry out similar work, since six other commentaries appeared before the 15th century, and several more afterwards. In a sense, Ibn Rushd's and Ibn Ṭumlūs' works gave rise to a new class of textbook: the «didactic poem and commentary». This combination is infrequent before their times, but it is relatively common afterwards, particularly in the field of the sciences.<sup>65</sup> The real purposes and influence

61. Ibn Ṭumlūs, *Sharḥ*, ms. Royal Library of Rabat 1014, 177. In much the same way as the precedent quote, this one is more anecdotal than scientific: Ibn Zuhr dared to phlebotomize his son when he was three years old.

62. Cf. for example Ibn Ṭumlūs, *Sharḥ*, mss. Wazzān 1626, 40v, National Library of Tunis 16.133, 53v, Royal Library of Rabat 1014, 57 and Zāwiyya Hamzawiyya 174/1892, 127. Ibn Ṭumlūs says that it is commonly admitted that urine dyes the skin like henna, but he has not experienced it. Although trivial it may seem, Ibn Ṭumlūs refutes Ibn Sīnā, from whom he has borrowed heavily in this section (cf. Ibn Sīnā, *Qānūn*, I, *fann* 2, *ta'līm* 3, *juṃla*, 2, *faṣl* 1, 135).

63. Ibn Ṭumlūs, *Sharḥ*, ms. Wazzān 1626, 54b-60a, Royal Library of Rabat 1014, 84-87, Zāwiyya Hamzawiyya, 121/1885, 106-109, Zāwiyya Hamzawiyya 174/1892, 179-183. This section is a good example of probable reference to Ibn Rushd's commentary.

64. Ibn Muḥannā, *al-Īdāḥ wa-l-tatmīm*, ms. Chester Beatty 4873, 11r. This is also a sign of the fact that both commentaries were considered as complementary works.

65. Cf. for example the numerous commentaries that were made of significant poems like the *Yāsāmīniyya* on algebra (cf. below) or the *urjūza* by Abū Miqrā' (fl. 13th century) on *mīqāt* (cf.

of these textbooks should be evaluated within a general study that considers the texts and their historical contexts.

*3.4. The readership of Ibn Sīnā's poem and of didactic poetry on scientific subjects in Almohad al-Andalus*

Ibn Rushd's commentary shows that medicine interested the Almohad elites, and Ibn Ṭumlūs' commentary shows that this interest could be so intense that an author might believe that writing a commentary of Ibn Sīnā's *Urjūza* would enhance his position in the courtly circles. Both Ibn Rushd and Ibn Ṭumlūs believed that Ibn Sīnā's poem could be a helpful tool for teaching medicine to the nobles, with the additional guide of a commentary.

Coinciding with the diffusion of Ibn Sīnā's *Urjūza fī l-ṭibb*, other didactic poems on scientific subjects appeared in the circles of Almohad power. One is probably the longest didactic poem ever written in Arabic (about 8,000 verses), the poem on medicine by the most famous physician-philosopher Ibn Ṭufayl (d. 1185), who led the Almohads' medical service. Preserved in a single manuscript in the library of the Mosque of Qarawīyīn in Fes (ms. num. 3158), this work remains not only unedited but largely unstudied.<sup>66</sup> The extension and content of the poem, which provided a thorough synthesis of medicine and therapy, indicate that it was not intended for curious amateurs but rather for students aspiring to become professional physicians. It is worth noting in this regard that the Almohads' medical service was a complex organisation which probably had among its functions the training of physicians.<sup>67</sup>

Some decades later, the Maghribi mathematician Ibn al-Yāsamīn (d. 600-1/1204-5), wrote three *urjūzas*:<sup>68</sup> *Urjūza fī l-jabr wa-l-muqābala*, otherwise known

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Lamrabet 2014 *passim*). As we will see below, Ibn Muḥannā pretended with his commentary to write an introductory manual to medicine.

66. Cf. nevertheless some introductory studies such as al-Ḍabbāgh 1984, Qāsim Muḥammad 1986 and Conrad 1996, 8-9. Renaud (1946b, 218-222) questioned Ibn Ṭufayl's authorship of the medical *urjūza* extant in the Qarawīyyīn and suggested that it was written by Ibn al-Khaṭīb. Although the discussion of this problem is beyond the scope of the present paper, it is generally agreed that the poem of ms. Qarawīyyīn 3158 was written by Ibn Ṭufayl.

67. Forcada 2005, 1094-1095 and Forcada 2011, 325-328.

68. Lamrabet 2014, 148 and 151-152.

as *al-Yāsamīniyya*, on algebra (54 verses);<sup>69</sup> *Urjūza fī a'māl al-judhūr*, on square roots (55 verses); *Urjūza fī l-kaffāt*, on double false position (eight verses). Ibn al-Yāsāmīn, who was on friendly terms with the Almohads, taught the *Yāsamīniyya* in Seville in 1189 or 1190. Since *al-Yāsamīniyya* is a complex work which condenses the principles of algebra in a few verses and requires a commentary in order to be fully understood, the readers of the text must have been students who already had relatively advanced training in mathematics. In the field of philosophy, akin to the scientific disciplines in that time, we also have Abū Bakr Bundūd's commentary of Ibn Sīnā's poem on logic, which may have been commissioned by Ibn Rushd.<sup>70</sup> To these titles we may add a number of poems devoted to scientific subjects more to do with religious disciplines such as the science of inheritance shares or Arabic folk astronomy, written by men of letters and religious scholars who did not belong to the Almohad circles.<sup>71</sup> With one exception, all these texts were written after the diffusion of Ibn Sīnā's poem during the mid-12th century.

The background to the production of so many texts of didactic poetry and commentaries was the cultural and religious policy implemented by the Almohads.<sup>72</sup> They were not only rulers but also religious reformists who followed a rationalised understanding of Islam. So as to spread their creed and change people's beliefs, they created bodies of propagandists like the *ṭalaba* which possibly included philosophers like Ibn Ṭufayl and Ibn Rushd. As Maribel Fierro says,<sup>73</sup> in order

69. On *al-Yāsamīniyya*, cf. Abdeljaouad 2005; on mathematical training at this time, cf. Djebbar 1980, Lamrabet 2008 and Brentjes 2014, 95-100, esp. 99.

70. Ibn Sharīfa 1992, 233-234.

71. Abū 'Abd Allāh Ibn Abī l-Khiṣāl (d. 1146), an important secretary at the Almoravid court, wrote an *urjūza* on *anwā'* (Aguirre Sádaba 2012, 701), in much the same vein as his disciple al-Abū 'Alī ibn Khalaf al-Umawī al-Qurṭubī (d. 1205-6) (Forcada 2004, 571); Ibn al-Farqad (d. 1176) wrote a *qaṣīda* on *anwā'* and an *urjūza* on inheritance shares (Velázquez Basanta 2004, 152); Ibn Hishām al-Lakhmī (d. 1181-82) wrote a commentary of *Qaṣīda fī tarḥīl al-nayyirayn*, attributed to the outstanding scientist Ibn al-Haytham (d.a. 1040) (Samsó 2008, 123); Abū Ja'far ibn Jumhūr al-Judhāmī (d. 1229) wrote a *qaṣīda* on lunar mansions (Samsó 2008, 128-133); Muḥammad ibn Yūsuf al-Laythī al-Ishbīlī al-Sabtī (fl 13th century) wrote a poem on solar motion and another on the lunar mansions (Lamrabet 2014, 159-160); 'Umāra ibn Yaḥyā ibn 'Umāra al-Ḥasanī of Béjaïa (alive in 1193), wrote a poem on inheritance shares (Lamrabet 2014, 144).

72. On the essential tenets of this cultural policy, cf. Fierro 2009a, 177-185.

73. Fierro 2009b, 100-103 and Fierro 2014b, 29-32.

to «educate their educators», the Almohads promoted the writing of encyclopaedic works on a wide range of subjects, including the rational sciences and the composition of didactic poems. Regarding the rational sciences, it is worth noting that the production of the Almohad period is heavily indebted to an earlier tradition that goes back to the philosophical circles of Saragossa of the late 11th century and early 12th. The philosophers of the Almohads like Ibn Ṭufayl and Ibn Rushd had their own intellectual agenda and interests which found a fertile ground for development at the Almohad court.<sup>74</sup>

If we combine this politico-cultural background with the evidence of the diffusion of Ibn Sīnā's poem on medicine mentioned above, one may confidently hypothesise that the flourishing of didactic poetry in al-Andalus from the 12th century onwards was due, to a large extent, to the success of this text and other didactic poems by the same author. As a comprehensive, well-structured and eloquent text that a relatively wide audience could appreciate, *Urjūza fī l-ṭibb*, offered to 12th-century scholars (and their patrons) a helpful model of texts for diffusing scientific knowledge according to their particular interests. This model was a relative novelty inasmuch as the previous tradition of didactic poems, particularly in the field of the rational sciences, was relatively weak. The addressees of these poems were, primarily, the members of the Almohad elites who did not need a thorough education in the sciences, but it seems that didactic poetry might also have been used in a more demanding educational syllabus, as suggested by the poems of Ibn al-Yāsamīn and Ibn Ṭufayl. The physicians, and in general, the scientists of late 12th and early 13th century al-Andalus tend to present a multifaceted intellectual profile, in tune with the idealised portraits of the «physician-philosopher» as described by Galen, and the philosopher understood as a metascientist who aspires to achieve all-encompassing knowledge as described by al-Fārābī.<sup>75</sup> Didactic poetry may have been seen as helpful pedagogic element for this particular kind of scholar who required intensive training in a variety of areas.

74. Forcada 2005, 1104-1106 and Forcada 2011, 299 ff, esp. 314-315. Ibn Ṭufayl may be considered as the éminence grise behind an intellectual project that proposed the Aristotelisation of the rational disciplines and the diffusion of rationalistic spirit among the elites, executed mostly, but not exclusively, by Ibn Rushd. It is worth noting that these philosophers and their disciples were the first promoters of didactic poetry on scientific subjects.

75. Forcada 2011, 299-311, esp. 309-311.

#### 4. DIDACTIC POETRY ON MEDICINE FROM THE 13TH CENTURY ONWARDS

##### *4.1. Ibn Andrās and the aftermath of the Almohads*

There is no precise evidence of the actual use of didactic poetry in Almohad times besides the scarce references given above. This is probably because the Almohads and their cultural project abandoned al-Andalus during the first decades of the 13th century, precisely when the genre was about to experience a remarkable growth. Didactic poetry, and more particularly didactic poetry on medicine and the sciences, flourished in the towns and cities that inherited the cultural life of the Almohad times. Two areas of al-Andalus replaced Seville as the main foci for the rational sciences. The first was Murcia and its surrounding region, where we find notable scientific activity with strong connections to the Almohad scholars and centres of learning during the last decades of the 12th century and the early decades of the 13th.<sup>76</sup> The Christians who gradually conquered the region of Murcia between the 1240s and 1270s found notable physicians and scientists like Muḥammad al-Riqūṭī, for whom the king of Castile Alphonse X created a madrasa of sorts in Murcia. After some time, however, al-Riqūṭī decided to emigrate to Muslim lands as did many other scholars. As we will see below, the scholars from Murcia or of Murcian origin were remarkably active in the diffusion and creation of didactic poetry on medicine and the sciences. One of these scholars was Muḥammad Ibn Andrās (d. 1275),<sup>77</sup> a physician and linguist who arrived in Béjaïa ca. 1260 after having spent some time in Tangiers. He practised and taught medicine in Béjaïa and then became court physician to the Hafsid ruler of Tunis, Muḥammad al-Mustanṣir (r. 1249-1277). His son, Abū Ya'qūb Yūsuf ibn Andrās (d. 1329), born in Murcia, was known as «the Ibn Sīnā of his time», because he was a physician, mathematician, astronomer and philosopher. Like his father, he also served the Ḥafsids and was a teacher. The encyclopaedic intellectual profile

76. Forcada 2011, 300-301 and the bibliography mentioned here. Although there is no evident connection between the authors of this time and the physicians of Murcian origin we will consider next (al-Riqūṭī, Ibn al-Raqqām, Ibn Luyūn and Ibn Andrās), all these latter scholars (with possibly one exception) are described as men who possessed a thorough knowledge of scientific disciplines, and most of them knew philosophy.

77. On his life and works, cf. Maḥfūz 1982-86, 1, 56-57, Aïssani 2001, 'Abd al-Wahhāb 2005, 2, 771 ss., Velázquez Basanta 2009, 330.

of the son strongly suggests that his father was also a scholar in the manner of Ibn Sīnā. The biography of Ibn Andrās father written by one of his disciples, al-Ghubrīnī (d. 1314), contains important information on the use of medical poetry in teaching that is worth reproducing here:<sup>78</sup>

I [al-Ghubrīnī] studied Ibn Sīnā's *Urjūza* in precise and clear lectures with him [Ibn Andrās]. The most prestigious students attended these lessons, in which the issues that the books did not explain were thoroughly examined. The noble judge Abū 'Abd Allāh Ibn Ya'qūb attended his lectures when he passed through Béjaïa coming from Tangiers. The wise *faqīh* Abū Bakr Ibn al-Qallās [followed his lessons as well].

I studied [with him] all the general principles of the *Qānūn* after having read the *Urjūza* and the questions on these issues were addressed according to the rules of theory and the sound argumentation (...)

[Ibn Andrās] wrote an *urjūza* about some medicaments that he finished in Béjaïa. He — may God have mercy on him — began to compose [a poem] on the simple drugs mentioned in the *Qānūn* and he asked me to collaborate writing verses about some medicaments. I wrote some of them but I do not know if he finished the poem.

The teaching of medicine described above would not necessarily have corresponded to the education of a future physician. Although al-Ghubrīnī says that he began to collaborate with Ibn Andrās in a poem on pharmacology, he did not become a professional physician.<sup>79</sup> Al-Ghubrīnī's study of medicine focuses on the theoretical principles of the matter, which are learned from Ibn Sīnā's *Qānūn* and *Urjūza*, the latter being considered as an introduction to the former. Al-Ghubrīnī says moreover that Ibn Andrās' lectures on Ibn Sīnā's poem attracted an «audience of selected students» (*nubahā' al-ṭalaba*). Although he only mentions two legal scholars, the author conveys the idea that Ibn Andrās' audience was made up to a considerable extent by people who were already educated. This excerpt contains further evidence of the fact that a certain knowledge of medicine had been considered an important element of general education, and that Ibn Sīnā's poem was an

78. Al-Ghubrīnī, *'Unwān al-dirāyā*, 75-76.

79. Cf. Aïssani 2001. Besides being the chronicler of the intellectual life of Béjaïa, Al-Ghubrīnī was a judge and a legal scholar. It should also be noted that the assistance that Ibn Andrās obtains from al-Ghubrīnī is literary and not medical.

important tool for the transmission of medical lore to non-specialists. In addition, al-Ghubrīnī's work bears witness to a phenomenon that we have already seen in the authors of 12th-century al-Andalus: by writing commentaries or poems on a much-admired work such as Ibn Sīnā's *Urjūza fī l-ṭibb*, they hoped that, by association, they might enjoy some of its prestige.

#### 4.2. *Hafsid Tunis*

In the late 13th century, Tunis was a receptive society which welcomes émigré physicians from al-Andalus<sup>80</sup> and other regions. One of them was the Sicilian 'Abd al-Salām ibn Ibrāhīm al-Ṣiqillī al-Qurashī, who was active in the mid-14th century.<sup>81</sup> He wrote two commentaries on didactic poems on medicine which remain unedited: one on an unknown poem on anatomy (*manzūma fī-tashrīḥ*), and the other on Ibn 'Abd Rabbihi's *Urjūza fī-l-ṭibb* seen above. His son Aḥmad ibn 'Abd al-Salām, known as al-Sharīf al-Ṣiqillī (d.a. 1418), was one of the outstanding physicians of his time.<sup>82</sup> Al-Sharīf al-Ṣiqillī taught medicine in the madrasa of the *Zaytūna* of Tunis. There is also a reference of a student who said that al-Sharīf al-Ṣiqillī taught him Ibn Sīnā's *Urjūza*,<sup>83</sup> and a commentary on Ibn Sīnā's *Urjūza* entitled *Taqyīd 'alā Urjūzat Ibn Sīnā fī l-ṭibb* («Register of the notes on the *Urjūza* of Ibn Sīnā on medicine») is attributed to him.<sup>84</sup> According to one of the manuscripts, the book is a summary of the poem written by a disciple of al-Sharīf al-Ṣiqillī who wrote down (*qayyada*) the lessons of his master. It is reasonable to surmise that Ibn Andrās and other Andalusī scholars brought the poem of Ibn Sīnā and, in general, the Andalusī interest in didactic poetry of medicine, to the domains of the Ḥafsid. The study and edition of the commentaries mentioned in this section, and other works that may lie untouched on the shelves of public and private libraries, would certainly help to clarify the interrelation of Tunis with other centres of learning in Western Islam.

80. Cf. on other Andalusī physicians besides the Banū Andrās, Brunschvig 1940-47, 2, 371.

81. 'Abd al-Wahhāb 1910, 486-7

82. 'Abd al-Wahhāb 2005, 2, 775-77.

83. Al-Mannūnī 1982, 132.

84. The work remains unedited but there is in Ben Miled 2012, 94-96, a thorough summary of and a reference of the extant manuscripts. In 'Abd al-Wahhāb 1910, 488, there is the transcription of the introduction and colophon of one manuscript.

### 4.3. *Nasrid Granada and Marinid Maghrib*

#### 4.3.1. Contextual aspects of didactic poetry and teaching

The Nasrid kingdom of Granada, the last bastion of Andalusī Islam from 1230 to 1492, differed substantially from the Almohad state in many respects but professed the same concern for knowledge and science. Although this is not the place to deal with the continuities and disruptions between the Almohad and the Nasrid cultures, there are two circumstances which are worth mentioning for our purposes. First, the connections established between the scholars of al-Andalus and the scholars of Maghrib during the 12th century remained close, even though the two sides of the Straits of Gibraltar were ruled by different dynasties (Nasrids, Merinids and Ḥafṣids);<sup>85</sup> second, didactic poetry, and specifically the knowledge of Ibn Sīnā's *Urjūza fī l-ṭibb*, not only survived the political transition but actually experienced renewed vigour. The quantitative increase in didactic poems on medicine and the sciences and their commentaries was largely due to the introduction of the madrasa system in the Maghrib from the 13th century onwards. The Marinids fostered the creation of madrasas, and the Nasrids followed their lead in the mid-14th century by building the madrasa of Granada.<sup>86</sup> Medicine and other rational sciences became part of the curricula of the madrasas and other centres of learning for students of all kinds. Poetry became an important didactic tool. Ibn Sīnā's *Urjūza* was employed for imparting knowledge of medicine. Many poems were written by the scholars to teach specific or general medical subjects and other scientific areas. The Nasrids fostered the study of medicine. Ibn al-Khaṭīb also tells us that medicine was one of the disciplines that the members of Granada elite had to know.<sup>87</sup> In Granada, between 1365 and 1367,

85. So far as I know, there is no systematic study of the mobility of scientists in the space defined by present day south-eastern Spain and the northern regions of Morocco, Algeria and Tunis; nor of the teacher-disciple relations between them. See, however, helpful though partial approaches in Puig 1984 and Franco Sánchez 1981. Possibly one of the best illustrations of the complex educational process undertaken by the outstanding scientists of the time is al-Qalaṣādī's description of his own education given in the *Riḥla*, which is analysed in depth in Marín 2004.

86. For a general approach to this issue, cf. al-Qāḍī 1981 and Marín 2011; on the madrasa of Granada, see Cabanelas 1987 and Samsó 2011, 394-398. This madrasa (madrasa Yūsufiyya) was founded in 1349 by Yūsuf I (r. 1333-1354). There were, however, some precedents.

87. Ibn al-Khaṭīb, *al-Iḥāṭā fī akhbār Gharnāṭa*, 3, 390; cf. Puig 1983, 436.

the sultan Muḥammad V (r. 1354-1359 and 1362-1391) built the first hospital in al-Andalus history.<sup>88</sup> The state of affairs regarding medicine and the sciences was largely replicated in the Marinid kingdom.<sup>89</sup> Scientific disciplines and medicine were taught in the madrasas. Sophisticated devices like the clock of the Abū 'Ināniyya madrasa were built. In much the same way as in Granada, the mosques had officials (*muwaqqits*) trained in mathematical astronomy who were able to calculate prayer times and determine other relevant aspects of religious cult. Many hospitals were created and medicine flourished.<sup>90</sup>

Two stories of the late 15th century give direct evidence to the use of didactic poetry in the teaching of medicine and other rational sciences as well in al-Andalus. The mathematician al-Qalaṣādī (d. 1486) tells us that he studied under Ibn Fattūḥ (d. 1463/867) at the madrasa of Granada Ibn Sīna's poem on logic and other unspecified *urjūzas* on medicine by Ibn Sīnā that included in all probability *Urjūza fī l-ṭibb*.<sup>91</sup> From Ibn Fattūḥ, al-Qalaṣādī also learned religious disciplines and language at this madrasa. He commented on an *urjūza* on the saphaea that Ibn Fattūḥ wrote, but al-Qalaṣādī does not say explicitly that he learned astronomy at the madrasa of Granada.<sup>92</sup> A letter dated from 1494 written by a Muslim who lived in the Christian dominions recalls the excerpt by al-Ghubrīni analyzed above. The sender was Muḥammad al-Qurashī, who may have been a student at the madrasa of Saragossa; the addressee was Abū 'Abd Allāh al-Ghāzī of Belchite, a professor of Muḥammad al-Qurashī. The student said that he had read a commentary of Ibn Sīnā's poem in order to prepare for the study of the theoretical part of Ibn Sīnā's *Qānūn*.<sup>93</sup> This letter has been taken to demonstrate the presence of regular medical studies at the madrasa of Zaragoza in the 15th century,<sup>94</sup> even though this may be stretching the evidence. What we can plausibly consider

88. On this hospital, cf. Franco Sánchez 1999, 154-160 and Peláez 2011. Although it is possible that medicine was taught in the hospital of Granada, there is no actual evidence of this.

89. For a summary of sciences in Morocco, cf. Zaimeche, al-Hasani and Ball 2004.

90. On medicine in Merinid Maghrib, cf. Akhmisse 1991, 45-51 and al-Ganūnī 2013, 135 ff; for further insights into the teaching of medicine in this context and in other periods as well, cf. Akhmisse 1991, 109-122 and Benabdallah 2006, 5-17.

91. Al-Qalaṣādī, *Riḥla*, 167-168.

92. Samsó 2011, 398.

93. Ribera 1928, 352-355, esp. 353: 11-22. For partial translations and paraphrases of the text into English, cf. García-Ballester 1994, 363-4 and Miller 2008, 66-67. Although several authors say that the commentary mentioned here is that of Ibn Rushd, there is in fact no direct evidence of this.

94. García-Ballester 1994, 363 and the bibliography mentioned here.

is, on the one hand, that there was indeed a madrasa in Saragossa where medicine was imparted, although we do not know its exact nature;<sup>95</sup> and on the other, that this madrasa followed the essential educational guidelines of Granada's centres of learning since the Muslims living in the Christian lands considered Granada as their main intellectual reference. Whatever the case, the above letter bears witness to the interest aroused by medicine among the Muslim religious scholars of 15th-century Iberia, who used Ibn Sīnā's poem and its commentaries as a source of medical knowledge.<sup>96</sup>

This medical culture imparted in the madrasas would have formed the basis for a professional career but we do not know how the physicians were trained; we may surmise that the traditional system based on the personal relationship between the teacher and the student, the master-apprentice model, remained the standard method.<sup>97</sup> Within this context, it seems that didactic poetry and the associated commentaries were less relevant for the training of physicians. Ibn Muḥannā, a disciple of Ibn al-Khatīb born in Ceuta and active in Fes, says in his *al-Īdāḥ wa-l-tatmīm* mentioned above that he read Ibn Sīnā's *Urjūza* with the commentaries of Ibn Rushd and Ibn Ṭumlūs when «he was a child», indicating that these readings predated his medical training.<sup>98</sup> However, *al-Īdāḥ* gives interesting information on this issue that will be discussed below.

#### 4.3.2. The poems on medicine and their commentaries on both sides of the straits

The context described above accounts for the remarkable number of versified texts and commentaries found in Nasrid Granada and Merinid Maghrib and the diffusion of Ibn Sīnā's poem.<sup>99</sup> The authors, the works and their interconnections will be showed in the following lines.

95. Miller 2008, 62.

96. Ibn Rushd's commentary of Ibn Sīnā's poem was copied by a Muslim in 1480 in Valencia. According to Miller (2008, 72), this unknown copyist may have had connections with Muhammad al-Qurāshī's circle.

97. Puig 1983, 436.

98. Ibn Muḥannā, *Īdāḥ*, ms. Chester Beatty 4873, 2r.

99. The remarkable number of texts regarding the didactic poetry on medicine is on a par with the works on other scientific disciplines written during the 14th and 15th centuries. Since these latter texts are not the object of the present study, an approximate quantification based on Lirola

## 4.3.2.1. From late 13th-century to mid-14th century

At the end of the 13th century, the sultan Muḥammad II (r. 1273-1302) invited the physician-philosopher Muḥammad al-Riqūfī of Murcia to teach at Granada.<sup>100</sup> Al-Riqūfī taught medicine, mathematics and other subjects to the sultan and to a large number of disciples, who attended the lectures that he gave in his home. Most of them became physicians. One of his outstanding disciples, Aḥmad ibn Muḥammad al-Karnī (alive in 690/1291), is known to have based a prognosis on Ibn Sīnā's *Urjūza*.<sup>101</sup> Muḥammad II invited another physician-philosopher of Murcian origin Ibn al-Raqqām (d. 1315), who came from Béjaïa,<sup>102</sup> where he may have met Ibn Andrās or his disciples. Although he is mostly remembered as an astronomer,<sup>103</sup> in Granada Ibn al-Raqqām taught medicine and mathematical disciplines, among them astronomy. He composed a didactic poem on the use of the astrolabe which is unedited and unstudied. He wrote a mathematical treatise on arithmetic and algebra that contains an *urjūza* about the square number.<sup>104</sup> Ibn al-Raqqām taught mathematics and astronomy to Ibn Hudhayl (cf. below). The historian and legal scholar Ibn al-Farrā' (d. 1297)<sup>105</sup> wrote a commentary of Ibn Sīnā's poem entitled *Naẓm al-ḥulā fī sharḥ Urjūzat Abī 'Alī* (String of jewels on the commentary of Ibn Sīnā's *urjūza*). This work has not come down to us. What we know about the life and intellectual profile of the author strongly suggests that he was not a professional physician but, like al-Ghubrīnī, al-Qalaṣādī and Muḥammad al-Qurāshī, a learned scholar who was keen to acquire some additional medical culture.<sup>106</sup>

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2004-12, Fierro 2014a and Lamrabet 2014 will be sufficient to indicate their importance: twenty or so on astronomy (mathematical astronomy, astronomy in the service of religious worship, folk astronomy and astrology); around ten on mathematics; and some 25 on the science of inheritance shares.

100. Samsó 1981, 172-175 and Samsó 2011, 388-389 passim.

101. Ibn al-Khaṭīb, *al-Iḥāṭā fī akhbār Gharnāta*, 1, 206-207; cf. Puig 1983, 434. To the best of my knowledge, this is the second example of the use of Ibn Sīnā's poem in medical practice, the first being Ibn Zuhr's treatment for hardening the skin of babies mentioned above (cf. n. 29).

102. Ibn al-Khaṭīb, *al-Iḥāṭā fī akhbār Gharnāta*, 3, 69-70.

103. Samsó 2006.

104. Lamrabet 2014, 162.

105. Samsó 2011, 433; cf. also Boloix 2004.

106. Ibn 'Abd al-Malik al-Marrākushī (*al-Dhayl wa-l-takmila*, 5, 116-117, n°. 226), who gives a thorough list of Ibn al-Farrā''s teachers, says that he learned medicine from Abū Bakr ibn al-Muḥallab. The other teachers mentioned here taught him literary and religious disciplines.

Another notable scholar of Murcian origin, Ibn Luyūn (b. Almeria, 1282-d. 1349),<sup>107</sup> devoted his life to teaching, probably in private circles. His disciples included two outstanding physicians of the period, Ibn al-Khaṭīb (1313-1374) and Ibn Khātima (ca. 1300-1369). Ibn Luyūn was a polymath whose works encompassed several didactic poems, five of them on medicine and other scientific subjects. He wrote a *qaṣīda* on medicine entitled *al-Īmād fī taqṣīm al-amrād* (The brightness about the division of maladies). According to Ibn al-Qāḍī,<sup>108</sup> it dealt with anatomy (*tashrīḥ*). Ibn Luyūn also wrote two *qaṣīdas* on the science of inheritance shares and a *qaṣīda* on arithmetic. The only didactic poems on scientific subjects that have come down to us are an *urjūza* on agriculture (*Urjūza fī l-filāḥa*) and another on land surveying — that is, works on applied geometry (*Kitāb fī l-handasa*).<sup>109</sup> Interestingly, his disciple Ibn al-Khātima wrote a *qaṣīda* on medicine entitled *Waṣl al-ḥubb fī ḥadīth al-ṭibb* (Bond of love about the tradition of medicine), a long text of 447 verses which remains unedited and unstudied.<sup>110</sup> Ibn Hudhayl al-Tujībī (d. 1352), a disciple of Ibn al-Raqqām, taught medicine and Islamic law at the madrasa of Granada.<sup>111</sup> Ibn al-Khaṭīb, the most important writer of the Nasrid period and a remarkable physician, says that before the creation of the madrasa of Granada he learned medicine, mathematics and astronomy from Ibn Hudhayl.<sup>112</sup> This latter taught Muḥammad al-Shaqūrī (d. after 1374), who also learnt from al-Karnī.

#### 4.3.2.2. From the late 14th-century onwards

Ibn al-Khaṭīb not only wrote didactic poetry on medicine but contributed to its diffusion in the Maghrib. He appears to have taken inspiration from Ibn Sīnā's *Urjūza* to write his long didactic poem (1600 verses) usually known as *Rajaz*

107. Lirola and García Sánchez 2006.

108. Ibn al-Qāḍī, *Durrat al-Hijāl*, 3, 293-294.

109. Both *urjūzas* are important sources for the history of science in Nasrid Granada. On the first, cf. Lirola and García Sánchez 2006, 43-45; on the second, cf. Moyon 2016.

110. For a short summary of this poem, cf. Lirola and Garijo 2004, 708; cf. moreover Fierro 2014a, section 10, num. 155.2.

111. Ibn al-Khaṭīb, *al-Iḥāṭa fī akhbār Gharnāṭa*, 4, 390; cf. Puig 1983, 487 and Samsó 2011, 398.

112. Ibn al-Khaṭīb, *al-Iḥāṭa fī akhbār Gharnāṭa*, 4, 459.

*ft l-tibb*.<sup>113</sup> According to Vázquez de Benito,<sup>114</sup> the poem has the same structure and content as Ibn al-Khaṭīb's *ʿAmal man ṭabba li-man ḥabba* (Work of the practitioner of medicine for he who loves), a treatise on the practical part of medicine. It seems that *Rajaz ft l-tibb* was planned as a popular version of the above treatise with which the author aspired to reach a larger readership.<sup>115</sup> He also wrote two other didactical poems that have not survived, *Rajaz ft l-aghdhiya* (Poem on food) and *Rajaz ft a-māl al-tiryāq* (Poem on the theriac).<sup>116</sup> Interestingly, Ibn al-Khaṭīb wrote *ʿAmal man ṭabba* for the Marinid sultan Abū Sālim Ibrāhīm (r. 1359-1361) during his exile in Morocco. Abū ʿAbd Allāh Muḥammad al-Shaqūrī (d. after 1374), a colleague of Ibn al-Khaṭīb and disciple of Ibn Hudhayl, wrote a treatise entitled *Tuḥfat al-mutawassil wa-rāḥat al-mutaʿammil* (Gift from he who prays and rest of he who reflects). The third section of the book, which is devoted to the *regimen saninatis* of old men, largely consists of a commentary of the verses from Ibn Sīnā's poem devoted to the same subject.<sup>117</sup> Although the author is not known to have spent time in the Maghrib, it is worth noting that his grandfather, Ghālib al-Shakūrī, who taught him medicine, spent many years in the service of the Marinids.<sup>118</sup>

At the beginning of the 15th century, Ibn Muḥannā al-Ṣabṭī, a disciple of Ibn al-Khaṭīb from Fes, wrote a commentary on Ibn Sīnā's poem entitled *K. al-Iḍāḥ wa-l-tatmīm* (Book of Illumination and Completeness) for a minister of the Marinid sultan Abū Saʿīd ʿUthmān III (r. 1398-421).<sup>119</sup> Even though this work is virtually unknown, it seems to be one of the most important commentaries on Ibn Sīnā's *Urjūza ft l-tibb*.<sup>120</sup> The life of the author is also rather obscure, but according to what he himself says in the commentary, he was a scholar in the Andalusī tradition

113. The work is edited, translated into Spanish and commented upon in Vázquez de Benito 1982, 1990 and 1992. The poem is also entitled *Manẓūma ft l-tibb*. For further references, cf. Lirola, Vázquez de Benito et al. 2004, 670-671.

114. Vázquez de Benito 149-148, 1982.

115. Vázquez de Benito 151-150, 1982.

116. Lirola, Vázquez de Benito et al. 2004, 689.

117. On the author and the work, cf. Renaud 1946a, Samsó 2011, 436-7 and al-Khaṭṭābī 1988, 2, 245 ff.

118. Renaud 1946a, 32.

119. On the author and the work, cf. Rénaud 1931, 35-36, al-Khaṭṭābī 1988, 1, 81, and al-ʿĀmirī 42, 2012. Fragments of the work are edited in al-Mannūnī 1982, 132-133.

120. Al-Maqqarī, *Nafh al-ṭīb*, 7, 281, says that it was one of the most innovative commentaries, and one of the books who was best known in the Maghrib.

(via Ibn al-Khaṭīb) and active in the intellectual life of Fes,<sup>121</sup> and was moreover particularly interested in the search of knowledge.<sup>122</sup> In the introduction to *al-Idāh*, he says that he wanted to offer a more thorough and longer commentary than those of Ibn Rushd and Ibn Ṭumlūs. When the work was finished, the author felt dissatisfied with it and did not know whether to abandon it, burn it or hide it. However, when a certain Abū l-ʿAbbās Aḥmad ibn Abī Bakr al-Ḥasanī showed him al-Sharīf al-Ṣiqillī's commentary, Ibn Muḥannā decided that the work was not as bad as he thought and brought it into circulation.<sup>123</sup> In this context, he explains the title of the book by saying that it contained issues that were neglected by «the experts and the most advanced scholars» (*ahl al-ʿilm wa-l-taqdīm*)». Even though a complete analysis and assessment of the contents of the work cannot be done without a critical edition, it is worth noting that Ibn Muḥannā quoted unusually high numbers of works and authors in order to produce an exhaustive commentary.<sup>124</sup>

The final purpose of the commentary is the teaching of physicians. Ibn Muḥannā goes into this question in great detail, aligning himself with a particular methodology of teaching and a tradition of professors that comprised his own teacher, Ibn al-Khaṭīb, Ibn al-Khaṭīb's teacher, Ibn Hudhayl, and before these two, Ibn al-Nafīs

121. Ibn Muḥannā, *Idāh*, Ms. Chester Beatty 4873, 5v *in fine*: he mentions a conversation with Abū ʿAbd Allāh al-Miknāsī (d. 1392) about the death of Ibn Sīnā. This man was an astronomer who made the water clocks of the minaret of the mosque Qarawīyīn of Fez (cf. Lamrabet 2014, 193).

122. This aspect of his intellectual profile may be deduced from the numerus sources quoted in the book but also in the section of *Idāh* edited in al-Mannūnī 1982, 145-148. In order to solve a question on natural heat that one had posed in a short poem, he asked several experts and wrote a letter to al-Sharīf al-Ṣiqillī, who did not answer. His own commentary of this poem is based on a source that was well known in al-Andalus and the Maghreb, Ibn Rushd's *Kulliyāt*, but also in infrequent works of Persian authors: *Sharḥ al-Mudkhal*, the commentary of Ḥunayn ibn Ishāq's *Masā'il fī l-ṭibb* written by Ibn abī Ṣādiq (fl. 11th c.) the disciple of Ibn Sīnā; the commentary of Ibn Sīnā's *Ishārāt* written by Fakhr al-Dīn al-Rāzī (d. 1210). He mentions in addition Ibn al-Nafīs commentary of Ibn Sīnā's *Qānūn*, which is frequently quoted in the body of *al-Idāh*.

123. Ibn Muḥannā, *Idāh*, ms. Chester Beatty 4873, 1r-2v; cf. the edition in al-Mannūnī 1982, 141-142.

124. Some of the authors gleaned from the pages of the ms. Chester Beatty 4873, which is incomplete: Hippocrates, Aristotle, Galen, Ḥunayn ibn Ishāq; al-Rāzī, al-Mājūsī, al-Zahrāwī, Ibn Sīnā, Ibn Riḍwān, Ibn Rushd, Ibn Ṭumlūs, Ibn al-Nafīs, Ibn Hudhayl, Ibn al-Khaṭīb. He also mentions two well known lexicographers by the name of their works: al-Khālīl ibn Aḥmad, *ṣāḥib al-ʿAyn*, and Ibn Sīda, *ṣāḥib al-Muḥkam*.

(d. 1288).<sup>125</sup> Ibn Muhannā reports that Ibn al-Khaṭīb told him that the professors of medicine he met applied a three-tier introductory process to medicine:

- i. They put in the hands of the beginners an «introduction» (*muqaddima*) which contained an explanation of the origin of medicine, its nobility and necessity.
- ii. Then the students began learning the ethics of medicine in Pseudo-Hippocrates' *Testament*.
- iii. Then, the students were taught about «the things that he who wants to learn the art of medicine needs in the places of the book that it is read». This confusing sentence alludes to the topic of the eight headings (*ru'ūs*) that one must know before reading any book according to the Alexandrian philosophers<sup>126</sup> that is also found in the Alexandrian physicians.<sup>127</sup> The Islamic philosophers also used it,<sup>128</sup> and under their influence, the Islamic physicians included it in their works. The *Kāmil* of al-Mājūsī (d. 994), one of the most influential handbooks of Islamic medicine, contains a section on the eight headings,<sup>129</sup> with which the author describes his book.<sup>130</sup>

Ibn Muhannā goes on to say that he will imitate these professors by giving a book, *al-Idāh*, which, on the one hand, he considers literally as «booty» (*ghanīma*) for the beginners, particularly for those who do not have a good teacher; on the

125. Ibn Muhannā, *Idāh*, ms. Chester Beatty 4873, 2v; cf. al-Mannūnī 1982, 142. It is difficult to believe that Ibn Hudhayl learned directly from Ibn al-Nafīs. It would seem that Ibn al-Muhannā wants to connect himself with a symbolic line of noteworthy physicians.

126. MacDougall 2017, 722.

127. Pormann 2018, 347, n. 18.

128. Wisnovsky 2013.

129. Al-Mājūsī, *Kāmil*, I, 9-14.

130. The eight headings of the *Kāmil* (p. 9, ls. 12-14) are: 1. aim of the book; 2. benefit of studying the book; 3. reason for the title; 4. manner of instruction followed in the book; 5. rank of the book, in this case, in comparison with the rest of medical literature; 6. the name of the author; 7. correctness of the book; 8. divisions of the book. Even though the study of the issue is out of the scope of this article, it is worth noting that the eight headings of the *Kāmil* are virtually the same as those given by the Islamic philosophers (Wisnovsky 2013, 189-190), with one single exception: heading 6 of the *Kāmil*, which is out of place in this list, replaces a heading that has little sense in an encyclopaedic book like the *Kāmil*, «to which part of philosophy the book belongs». The order of the headings of the *Kāmil* differs from the order of the philosophers considered by Wisnovsky.

other, a reminder for the «outstanding masters» (*al-ashyākh al-mubarrizīn*), meaning that the commentary contains aspects of medicine that were unusual at that place and time. The commentary actually follows the order of the *Kāmil* of al-Mājūsī:

- (1) Section on the origin, nobility and necessity of medicine: Ms. Chester Beatty 4873, 2v-3r (not edited in al-Mannūnī 1982); *Kāmil*, 1st chapter.
- (2) Section on Pseudo-Hippocrates' *Testament*: Ms. Chester Beatty 4873, 3v (al-Mannūnī 1982, 142); *Kāmil*, 2nd chapter.
- (3) Section on the eight headings: Ms. Chester Beatty 4873, 3v in fine (partial ed. In al-Mannūnī 1982, 142-3); *Kāmil*, 3rd chapter.<sup>131</sup>

The work contains still another (long) section on Ibn Sīnā's life and works,<sup>132</sup> and then goes on to comment on the verses of the *Urjūza*. This commentary, therefore, corresponds symbolically to the body of the *Kāmil*. Many conclusions can be derived from this introduction. If we take Ibn Muhannā's testimony at face value, the Andalusi and possibly the Maghribī physicians taught medicine according to al-Mājūsī's *Kāmil*. Whether this is true or false, or partially true or false, should be evaluated in a later study. For our purposes, it is interesting that Ibn Muhannā seeks to use Ibn Sīnā's *Urjūza* with a thorough commentary as a sort of text-book for physicians. This attempt makes sense in a context in which, as we have seen, didactic poetry was so widespread in the learned circles of al-Andalus, and, by extension, in those of the Maghrib.

There are more commentaries from the Maghrib. One is possibly *al-Durra al-ḥasnā fī sharḥ Qaṣīdat Ibn Sīnā* (the Beautiful ≤ Pearl Concerning a Commentary on the Poem of Ibn Sīnā) by the mathematician and physician 'Alī ibn 'Abd Allāh ibn Haydūr (d. 816/1413),<sup>133</sup> dedicated to the sultan Abū Sa'īd 'Uthmān III (r. 800/1398-823/1421). According to the catalogue of the National Library of Medicine of the United States in Bethesda written by Emily Savage-Smith,<sup>134</sup> the

131. The headings considered by Ibn Muhannā apply to medicine in general, not to the book: 1. description; 2. subject; 3. principles; 4. purpose; 5. order within the sciences; 6. methods of learning; 7. parts; 8. reason for the name. However, Ibn Muhannā borrows heavily from the *Kāmil*.

132. Ibn Muhannā, *Idāh*, ms. Chester Beatty 4873, 4v-6v.

133. The commentary is preserved in a single manuscript kept at the U.S. National Library of Medicine (cf. [www.nlm.nih.gov/hmd/arabic/poetry\\_tb.html#top](http://www.nlm.nih.gov/hmd/arabic/poetry_tb.html#top)). It is worth noting that, although the title mentions the form «*qaṣīda*», the commentary is of the *urjūza*.

134. [https://www.nlm.nih.gov/hmd/arabic/poetry\\_3.html#a451item2](https://www.nlm.nih.gov/hmd/arabic/poetry_3.html#a451item2).

work is a commentary of Ibn Sīnā's *Urjūza fī l-ṭibb*. However, Lamrabet<sup>135</sup> considers it to be a commentary of a *qasīda mīmiyya* (poem rhymed with the letter *mīm*) on medicine, which is preserved in a manuscript of the National Library of Morocco. Even though the poem is not mentioned in the bibliographies of Ibn Sīnā, it seems that, commented by Ibn Haydūr, it circulated in the Maghrib.<sup>136</sup> Abū l-Faḍl al-'Ajalānī, an obscure physician who lived at the end of the 14th century and had a thorough knowledge of the medical legacy of al-Andalus,<sup>137</sup> wrote a work that possibly dealt with Ibn Sīnā's *Urjūza*, entitled *al-Shifā' 'alā mā fī Rajaz Ibn Sīnā min al-asmā'* (The healing about the names of the poem by Ibn Sīnā).<sup>138</sup>

In this period there was also a renewed interest in Ibn 'Azrūn's *Tadhyl*, the poem mentioned earlier as a complement to Ibn Sīnā's *Urjūza*. A late commentary written by an outstanding Fez physician, Abū l-Qāsim al-Ghassānī (b. 1553),<sup>139</sup> mentions two previous commentaries of the *Tadhyl*: one by an otherwise unknown author named Abū l-Qāsim ibn Yaḥyā al-Lamtūnī al-Tashfīnī, and the other by Abū l-Faḍl Muḥammad ibn Abī l-Qāsim al-'Ajalānī mentioned above. Al-'Ajalānī's commentary of Ibn 'Azrūn's poem is partially preserved in the commentary by Abū l-Qāsim al-Ghassānī and in a single manuscript that has not yet been edited or studied. Al-'Ajalānī wrote two didactic poems on medicaments which, like the commentary, remain unedited and unstudied:<sup>140</sup> *Urjūza fī a'māl al-'aqāqīr al-mufrada wa-l-adwiya al-murakkaba* (Poem about simple and compound medicaments) and *Urjūza fī tarkīb al-dawā' wa-jam'ihī* (Poem about the composition of medicines). In the later Marinid period we find two other medical poems that

135. Lamrabet 2014, 200, ms. G. 162. Unfortunately, I have been unable to obtain a copy of both manuscripts.

136. Cf. ms. Ara. 597 of the École des Langues Orientales de Paris, <https://bina.bulac.fr/ARA/MS.ARA.597>. The manuscript contains 'Abd al-Karīm ibn 'Abd al-Mu'min's commentary of a didactical poem on medicine that he himself wrote. In the first lines of this commentary, he mentions as a source of inspiration, Ibn Haydūr's commentary of Ibn Sīnā's *Mīmiyya*. This 'Abd al-Karīm ibn 'Abd al-Mu'min is possibly 'Abd al-Karīm ibn Mu'min, a physician of Fes who flourished in the 16th century (Renaud and Colin 1935, 1-19).

137. On this author and his works, cf. al-'Āmirī 178, 2012 ff.

138. Al-Mannūnī, 1982, 132; the author mentions this work in passing in a treatise on food.

139. On al-Ghassānī and his oeuvre cf. Renaud 1931, 217 ff and al-Khaṭṭābī 1985, introd. His commentary, still unedited, is entitled *al-Rawḍ al-maknūn fī sharḥ Urjūzat Ibn 'Azrūn* (The secret garden on the commentary of Ibn 'Azrūn's *urjūza*).

140. Al-'Āmirī 181, 2012

have not come down to us:<sup>141</sup> the first by the astronomer and mathematician Aḥmad ibn al-Ḥasan al-Khaṭīb al-Qusanṭīni (d. 1407), and the second, on the subject of medical experience, by Muḥammad ibn Ghāzī al-Fāsī (d. 1454).

## 5. CONCLUSIONS

Although some didactic poems on medicine and the sciences were written before the 12th century, the genre was marginal in al-Andalus prior to that time. The reception of Ibn Sīnā's *Urjūza fī l-ṭibb* in the mid-12th century or slightly earlier changed this state of affairs. The Andalusī scholars commented on this work and began to compose new didactic poems on medicine and scientific subjects. It is possible that the *succès d'estime* of Ibn Sīnā's poem made the Andalusī scholars believe in the possibilities of didactic poetry for the transmission of scientific knowledge. However, the emergence of the genre was due, to a large extent, to the religious and cultural policy of the Almohads, which demanded an intensive training of their servants in several areas. The Almohad court was, moreover, a fertile ground for the development of medicine, philosophy and the sciences; the scholars who worked for the Almohads spread the knowledge of Ibn Sīnā's medical poem and contributed to a relative flourishing of didactic poetry on medicine and the sciences. The physician-philosophers of the Almohads like Ibn Ṭufayl, Ibn Rushd and Ibn Ṭumlūs played an important role in this process; and the Almohads' development of institutions of learning undertaken did much to ensure the genre's vitality. Since the Almohad Empire was based in the Maghrib and included al-Andalus, didactic poetry on medicine and the sciences became an Andalusī and Maghribī phenomenon, though still focusing primarily on al-Andalus. Around the turn of the 14th century, scholars from Murcia who had the same intellectual profile of physician-philosophers as Ibn Ṭufayl or Ibn Rushd disseminated Ibn Sīnā's poem and the use of the genre in al-Andalus (then confined to the Nasrid kingdom of Granada) and the Maghrib. The learned elites of Granada, or at least a large part of them, became interested in medicine and the sciences for reasons that are still to a great extent unclear. These disciplines were taught in the courtly circles and at the madrasa of Granada to students of all kinds, not just to future physicians. Ibn Sīnā's *Urjūza fī l-ṭibb* was a frequent introductory reading for this general audience, although professional physicians

141. Al-Ganūnī 2013, 160-162.

also knew and respected the work. The production of didactic poetry on medicine and the sciences experienced a genuine flourishing. Marinid Morocco followed a similar process, which was fostered by several physicians from al-Andalus who, like Ibn al-Khaṭīb, lived and worked on both sides of the straits. These texts became an efficient pedagogical tool for the teaching of medicine and the sciences in societies in which education had attained a considerable degree of institutionalisation, and indeed they were widely used in Western Islam until the 19th century.

## APPENDIX

Commentaries of Ibn Sīnā's *Urjūza fī l-Ṭibb* written in Al-Andalus and the Maghrib until the beginning of the 15th century.

	AUTHOR	TITLE	DATE
I	Abd al- Raḥmān ibn Abī Jum'a ibn Qāsim al-Ḥakīm al-Qaysī	?	12th c. (first half)
II	Ibn Rushd	Sharḥ Urjūzat Ibn Sīnā	575/1180
III	Ibn Ṭumlūs	Sharḥ Urjūzat Ibn Sīnā	late 12th - early 13th
IV	?	Muqtaḍab (?) [of the comm. by Ibn Rushd and Ibn Ṭumlūs]	13th -14th (?)
V	Ibn al-Farrā'	Naẓm al-ḥulā fī sharḥ Urjūzat Abī 'Alī	late 13th
VI	al-Sharīf al-Ṣiqillī (m. d. 820/1418)	Taqyīd 'alā Urjūzat Ibn Sīnā fī l-ṭibb	late 14th — early 15th
VII	Ibn Muḥannā (active end of 8th/14th c. and beginning of 9th/15th c.)	al-Īḍāḥ wa-l-tatmīm	late 14th — early 15th
VIII	Alī ibn 'Abd Allāh ibn Haydūr (d.816/1413)	al-Durra al-ḥasnā' fī sharḥ Qaṣīdat Ibn Sīnā (?)	early 15th
IX	Abū l-Faḍl al-'Ajalānī (fl. beginning of 9th/14th c.)	Shifā' 'alā mā fī Rajaz Ibn Sīnā min al-asma'	early 15th

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