



Title	Studies in ‘Umdat al-Ṭabīb fī-Ma ‘rifat al-Nabāt (‘The Pillar Book of the Physicians for the Knowledge of Plants’) among the Andalusian Agronomic and Botanical Treatises
Author(s)	Barraso, M. Victor
Citation	アラブ・イスラム研究. 2012, 10, p. 93-121
Version Type	VoR
URL	https://doi.org/10.18910/105943
rights	
Note	

The University of Osaka Institutional Knowledge Archive : OUKA

<https://ir.library.osaka-u.ac.jp/>

The University of Osaka

STUDIES IN 'UMDAT AL-ṬABĪB FĪ-MA'RIFAT AL-NABĀT
 ('THE PILLAR BOOK OF THE PHYSICIANS FOR THE
 KNOWLEDGE OF PLANTS') AMONG THE ANDALUSIAN
 AGRONOMIC AND BOTANICAL TREATISES*

Victor M. BARRASO **

アンダルス農学・植物学書物の一つウムダトゥ・タビーブ
 『植物の知識に関する医者の方』に関する研究

この数十年間に、ロマンス語とアンダルス・アラビア語に関する膨大な数の研究がなされたが、当時、ロマンス語とアンダルス・アラビア語は、文学言語のレベルに達しておらず一般民衆の口語であったため、現存テキストは希少であり、その研究は、特にアラビア文字で記述された若干の現存テキストに関するものに限られていた。

しかし、ロマンス語とアンダルスアラビア語研究においてテキストが希少であるという障害に関わらず、スペイン人の言語学者とアラブの学者によって、興味深い研究が行われた。その際、少なくとも、これまで現れた異なる理論を通して、バイリンガリズムとダイグロシヤで特徴づけられるアンダルスの複合的な社会言語学的地図の解明を可能にするほか、部分的ではあるものの、アンダルス・ロマンス語の音声的・形態統語的構造の再構築を可能とするテキストを基に研究が進められた。

アラビア文字で記述されたテキストとしては、アンダルスの固有文学である *muwašṣahāt* (*kharja*) や *zajal* といった作品に集められたロマンス語の名言や格言が現存しているほか、ロマンス語の術語について記載した農学や植物学に関する科学的著作も現存している。

農学と植物学の科学的著作として、ロマンス語とアンダルス・アラビア語の語彙を集めた '*Umdat al-ṭabīb fī ma'rifat al-nabāt* (『植物の知識に関する医者の方』) がある。この作品は、セビリヤの農学者 Abū l-Khayr (11 世紀) の手によるものと推測され、言語学的見地のみでなく実用植物学的見地からも非常に興味深い。複数言語の術語を採録することで特徴づけられるこの植物学辞書は、膨大な種類の植物に関して、複数言語(最大で 13 言語にのぼる)による名称の記載がある。利用されている言語は、アラビア語、アンダルス・アラビア語、ロマンス語、ギリシア語、ペルシア語、ベルベル語、シリア語、ナバタイ語などである。

'*Umdat al-ṭabīb* に集められた膨大な植物語彙全体に関する研究は、いまだに不十分で

* The present paper, which was presented in a lecture at the 31st Congress of the Kansai Society for the Study of Arabic 「関西アラブ研究会」 on 22nd October 2011 in Osaka (Japan), is included in the research project on 'Forest and Agricultural Landscapes in Al-Andalus' (FFI2009-09826), 2010-2013, Escuela de Estudios Árabes (EEA CSIC), Granada, Spain.

** Doctorate Course, Studies in Language and Society, Graduate School of Language and Culture, Osaka University
 「大阪大学大学院言語文化研究科博士後期課程」: <http://www.VictorBarraso.com>

あり、語源学やスペイン語史に関する多くの研究においては無視されてきたが、この研究により、アンダルス・ロマンス語に関するきわめて早期の言語状況を採集することができる。また、中世（特に11世紀）のイベリア半島における社会言語学的状況の多様性と非均質性の理解に貢献する貴重な情報を取り出すことができる。これは、イベリア半島における後代の言語発展を予想させる、言語事実の抽出となろう。

1. INTRODUCTION

Despite the fact that a considerable number of research projects on Romance and Andalusī Arabic have been published in recent years, the study of these two vernaculars—which never reached the status of literary languages—has always been characterised by a lack of written sources.

However, from a study of those limited manuscript sources which have been preserved to the present day and the various theories that have come to light in recent times, we can approach the complex ‘sociolinguistic map’ of Al-Andalus—characterised by a bilingualism or multilingualism and diglossia—and make a reconstruction—at least partially—of the morphosyntactic and phonological structures of both Romance and Andalusī Arabic.

Apart from those in Latin script, the main sources in which some Romance and Andalusī Arabic terminology can be found are: (1) historical works—anecdotal Romance and Andalusī Arabic phrases and voices pronounced by historical figures in direct style; (2) the *Muwašṣaḥāt* (*kharja*) & *Zajal*—the two new forms of Arabic poetry which originated in Al-Andalus and which reflected the interference between Arabic and the Romance languages in the Iberian Peninsula; and (3) agronomic and botanical treatises and glossaries compiled by Andalusian naturalists particularly between the 11th and 13th centuries.

Within the latter, the multilingual dictionary of plants ‘*Umdat al-ṭabīb fī ma‘rifat al-nabāt*’ (The Pillar Book of the Physicians for the Knowledge of Plants)—authorship of which has recently been attributed to the agronomist Abū l-Khayr from Seville (11th-12th c.)—stands out because of its originality and innovation, both from a linguistic and a botanical perspective. In this work, a great number of plants are rigorously and meticulously described and generally translated into other languages (thirteen main languages)—Arabic, Andalusī Arabic, Romance, Ancient Greek, Byzantine Greek, Latin, Frank, Berber, Coptic, Hindi, Persian, Syriac and Nabataean.

The study of the vast Romance and Andalusī Arabic botanical terminology included in ‘*Umdat al-ṭabīb fī ma‘rifat al-nabāt*’ has not been widely investigated—especially in comparison to terminologies included in other Andalusian treatises—and until recently has even been ignored by the majority of Spanish language etymological and historical works. It may serve as a source for establishing the fundamental features of these two vernacular languages, and it should be considered as an essential key to understanding the heterogeneous and complex sociolinguistic reality in the Iberian peninsula—particularly in the 11th and 12th centuries when the interference between colloquial Arabic and Romance seems to have been a fairly common phenomenon—which determined the subsequent linguistic development of Spain and Portugal.

2. THE EMERGENCE AND DEVELOPMENT OF THE AGRONOMIC AND BOTANICAL SCIENCES IN AL-ANDALUS

Agronomic Science emerged in Al-Andalus as a consequence of the translation of a great number of Classical, Indian and Persian scientific books which took place in the *Bayt al-Ḥikma* (the House of Wisdom) in Baghdad¹, particularly during the 9th and 10th centuries. One of the events that greatly influenced the development of medicine, pharmacology, botany and also agronomy was the Arabic translation of *De Materia Medica* by Dioscorides² which the Byzantine emperor Constantine VII Porphyrogenitus (905-959) symbolically gave as a present to 'Abd al-Raḥmān III (912-961) in order to resume the diplomatic relations between Cordova and Byzantium which had commenced under the reign of the emir 'Abd al-Raḥmān II (822-852)³.

The translation of this work and the transfer of the agronomic scientific knowledge of Latin tradition that already existed in the Iberian Peninsula, of which the most representative agronomist was Junius Columella⁴, allowed a vast number of agronomic treatises to emerge in the Arabic language between the 10th and 14th centuries, which contributed greatly to the development of agronomy and botany in Al-Andalus.

Thus, a large number of scientists of Andalusian origin —most of them considered naturalists⁵— appeared in the Iberian Peninsula in the period under Arab rule. They were born and educated in Al-Andalus and they amassed wide knowledge in the field of natural sciences —medicine, botany, agriculture and pharmacology— since there was a close interconnection, at least in their early days, between the different scientific disciplines.

Although there was a large number of these naturalists, particularly between the 10th and 13th centuries, those whose works follow the same methodology as in *De Materia Medica* by Dioscorides have been considered to be the leading group. They are Abū I-Qāsim al-Zahrāwī "Abulcasis" (936, Medīnat al-Zahra - 1009, Cordova), Sulaymān b. Ḥassan ibn Juljul abū Dāwud (943, Cordova - 982), Ibn Wāfid (1008, Toledo - 1074, Toledo), Aḥmad b. Muḥammad Abū Ja'far al-Ġāfiqī (d. 1164), Abū 'Abd Allāh Muḥammad al-Idrīsī (1100, Ceuta - 1168), Musā b. Maymūn "Maimónides" (1135, Cordova - 1204, Fustāt), and Ibn al-Bayṭār (1190, Malaga - 1248). Other leading authors whose works have not been well preserved or well researched until now are Ibn Buklārīš (11th-12th c.), Ibn Bajja (d. 1138) and Abū I-'Abbās al-Nabātī also known as Ibn Rūmiyya (d. 1239), and they also deserve to be taken into consideration and included in the long list of

1 See M. G. Balty-Guesdon. (1992). "Le Bayt al-Ḥikma de Bagdad". *Arabica* 39: pp. 131-150.

2 It was translated from Greek into Arabic by Iṣṭiphān b. Bāsīl, a Christian living in Bagdād under the *khalīfa* Ja'far al-Mutawakkil (847-861), with the original text before him, and corrected by Ḥunayn b. Iṣḥāq in the 3rd/9th century; it was the only complete translation made in the Muslim world. See L. Lockhart. (1965). "Diyuskuridis". *EF* (II). Leiden: E. J. Brill, p. 349.

3 See Ibn al-'Awwām. (1988). *Kitāb al-filāḥa. Libro de Agricultura*. Ed. by E. García Sánchez and J. E. Hernández Bermejo. Madrid: Ministerio de Agricultura, p. 11.

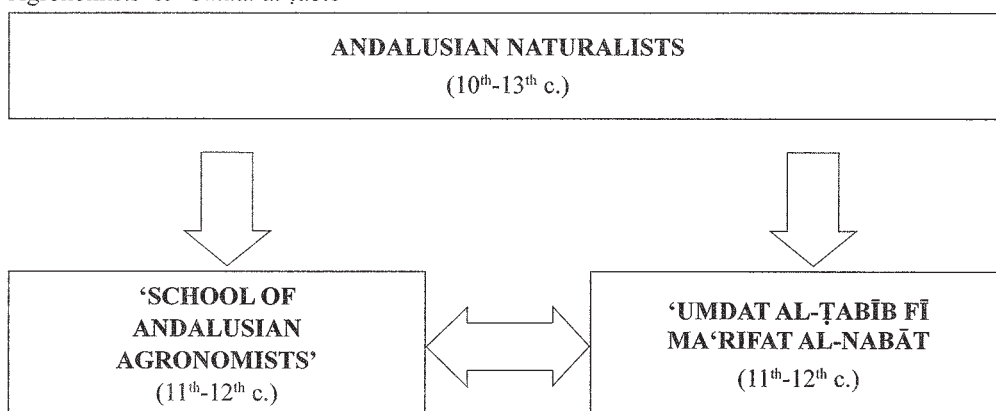
4 For the life and work of this agronomist from Gades, see Lucio Junio Moderato Columela. (1988). *De los trabajos del campo*. Ed. by A. Holgado Redondo. Madrid: Siglo XXI de España Editores.

5 The term "naturalist" —though it has a general sense nowadays—is appropriate for describing all scientists engaged in the study of the different branches of natural science such as medicine, botany, pharmacology, agriculture, geography, geology and zoology.

Andalusian naturalists.

The works of these physicians, pharmacologists, botanists and agronomists may be considered real dictionaries of simple drugs —mostly vegetable, but also animal and mineral. The information on each simple is divided into articles of different length and each simple is introduced by a heading which is usually arranged by alphabetical order or based on other patterns such as its qualities. The number of the collected simples also varies. One of the most prolific Andalusian naturalists was Ibn al-Bayṭār⁶ from Malaga. His work entitled *al-Jāmi‘ li-l-mufradāt al-adwiya wa-l-aḡḡiya* (the Book of Simples) lists over 1400 simples, although about two thirds of these are also included in Dioscorides’ and Galen’s books —the original simples contributed in Arabic are about 300 new plants.

Figure 1: The interrelationship between the Andalusian naturalists, the ‘School of Andalusian Agronomists’ & *‘Umdat al-ṭabīb*



Agriculture was at that time closely related to medicine, pharmacology and botany. At a certain point, some of these naturalists devoted themselves exclusively to agronomy. They composed treatises of a miscellaneous character that synthesised the accumulated knowledge of classical and oriental agronomic tradition and the knowledge of their own practical experiences in the field. For instance, Ibn Wāfid from Toledo (11th c.) —master of Ibn al-Lūnquh and Ibn Baṣṣāl— whose main work is *Kitāb al-adwiya al-mufrada* (the Book of Simple Drugs), also wrote a book on agriculture entitled *Majmū‘ fi-l-filāḥa* (the Compendium of Agriculture). These scientists who were “specialists” in agriculture worked mostly in Cordova, Seville, Toledo, Granada and Almeria.

After the capture of Toledo by Alfonso VI of Castile in 1085, the scientists who had settled in Toledo withdrew to Seville, where they met other agronomists. Thus, a group of agronomists known as the ‘School of Andalusian Agronomists’ emerged in Seville, which became a focal

6 “Botanist and pharmacologist, born in Malaga at the end of the 6th/12th century... He studied in Seville and collected plants in the districts round the town with his teachers Abū l-‘Abbās al-Nabāṭī, ‘Abd Allāh b. Ṣāliḥ and Abū-l-Ḥadīdī. See J. Vernet. (1971). “Ibn al-Bayṭār”. *EP* (III), p. 737.

centre for agronomic science in the 11th and 12th centuries.

In the final years of the 11th century, or —which seems more probable— at the beginning of the next century, *'Umdat al-ṭabīb fī ma'rifat al-nabāt*, a dictionary considered to be the first Andalusian work exclusively about botanical science, was completed. Although there are doubts regarding its authorship, we know that this treatise was written by one of the agronomists settled in Seville in the 11th century. Some of the most recent studies have attributed the authorship of *'Umdat al-ṭabīb* to Abū l-Khayr from Seville.

3. THE LEADING ANDALUSIAN AGRONOMISTS AND THEIR WORKS

The first references to agricultural science in Al-Andalus can be found in the farming almanacs *Kitāb al-anwā'* (the Calendar of Cordova) by 'Arīb b. Sa'd from Cordova (d. 370/980)⁷ and *Mukhtaṣar kitāb al-ḥilāḥa* (the Compendium of Agronomy), probably written by the physician and pharmacologist Abū l-Qāsim Khalaf al-Zahrāwī (d. 404/1013)⁸ —who is identified as “Abulcasis” in the Latin texts. Both authors worked in the court of 'Abd al-Raḥmān III (300/912-350/961) and al-Ḥakam II al-Mustanṣir (350/961-366/976) when Al-Andalus society, characterised by its great religious, racial and linguistic diversity⁹, reached the height of its splendour.

Nonetheless, it was not until the following centuries that the agronomic and botanical sciences reached their pinnacle¹⁰ in Al-Andalus. In particular, in the period between the 11th and 13th centuries —considered the time of greatest agricultural and botanical activity both from a practical and a theoretical point of view— Andalusian agronomic science reached its zenith. A great number of agronomists, botanists, pharmacologists and physicians would revolutionise pre-existing agricultural and botanical knowledge.

The leading figures —those whose works have been preserved—, most of whom were members of what is known as the ‘School of Andalusian Agronomists’, were an anonymous

7 *Kitāb al-anwā'* has been published by R. Dozy under the title of *Le Calendrier de Cordue de 961*. See Ch. Pellat. (1960). “‘Arīb b. Sa'd al-Kātib al-Ḳurtubī”, ^{E12} (I), p. 628.

8 His treatise entitled *Kitāb al-taṣrīf* is a compilation of 30 books on medicine, surgery and pharmacology. See E. Savage-Smith. (2002). “al-Zahrāwī, Abū-l-Qāsim Khalaf”. *EP* (XI), p. 398-399.

9 Concerning the linguistic situation, there appears to have been a coexistence of Classical Arabic, Andalusian Arabic and Romance dialects, at least in the earlier period (until the 10th century), and as in every other Arabic-speaking land, the Andalusian people were diglossic: they spoke their local dialect in all low-register situations, and Classical Arabic was only resorted to when a high register was required and for written purposes. A considerable degree of bilingualism must have existed. Some scholars prefer to use the term triglossia or even polyglossia to describe the linguistic situation of Al-Andalus. For further information about the linguistic situation in Al-Andalus, see K. Versteegh. (2003). *The Arabic Language*. Edinburgh: Edinburgh University Press, pp. 227-229.

10 “This agricultural expansion was clearly influenced by socio-cultural factors, as contacts between two separate civilisations brought forth new fashions and tastes. Eastern society was luxurious and refined compared to peninsular society, and this led to a desire, in the latter, to surpass or at least to equal the East”. See E. García Sánchez. (1992). ‘Agriculture in Muslim Spain’. In: Khayyusi, S. K. (ed.). *The Legacy of Muslim Spain*. Leiden: E. J. Brill, p. 989.

agronomist¹¹, Ibn Wāfīd¹², Ibn Baṣṣāl¹³, Abū l-Khayr¹⁴, Ibn Ḥajjāj¹⁵, al-Ṭīgnārī¹⁶ and Ibn al-‘Awwām¹⁷ —see Figure 2 below: the Chronological Diagram of the Leading Andalusian Agronomists and their Works.

The 11th century, which corresponds historically to the period of ‘Party Kings’ or ‘Taifa kingdoms’ (*mulūk al-ṭawā’if*/ملوك الطوائف)¹⁸ —when the unit of Al-Andalus broke up and was divided into nearly thirty separate political units— seems to be, particularly the court of Seville ruled by the ‘Abbādis dynasty¹⁹, the most prolific century in terms of the number of agronomists and treatises. Apart from Ibn Ḥajjāj (11th c.) and Abū l-Khayr (11th c.), who were both from and settled in Seville, and al-Ṭīgnārī (11th-12th c.) from Granada, other leading agronomists such as Ibn Baṣṣāl(11th c.) and ‘Alī b. al-Lūnquh (d. 1105)²⁰ left Toledo after its capture in 478/1085 by the Christian troops and established themselves in the court of Seville. As such, this kingdom became a kind of centre where physicians, philologists, pharmacologists, agronomists and botanists practiced their theories and experimented with species of plants.

Towards the end of the 12th century *Kitāb al-filāḥa* (the Book on Agriculture) —the most important of all the Andalusian agronomic works— was written by Ibn al-‘Awwām (12th-13th c.). This author was not only an agronomic theorist, he was also the owner of some cultivated lands in Aljarafe (*al-Šarāf*/الشرف) near Seville where he experimented with the different oriental species of plants and trees which had been introduced to Al-Andalus and put some of the most innovative agronomic techniques into practice. His work is a compilation of the previous agronomic sources of Andalusian, classical and oriental Arabic tradition. It also includes some chapters on animal breeding, particularly horses, and makes a valuable contribution concerning grafting techniques

11 This anonymous treatise has been edited and translated by A. C. López (1990). *Kitāb fī tartīb awqāt al-girāsa wa-l-maḡrūsāt: un tratado agrícola andalusí anónimo*. Granada: CSIC.

12 Ibn Wāfīd, ‘Abd al-Raḥmān b. Muḥammad. (1997). *Tratado de Agricultura: traducción castellana (Ms. s. XIV)*. Ed. by Cipriano Cuadrado Romero. Málaga: Universidad de Málaga.

13 Ibn Baṣṣāl. (1995). *Kitāb al-qāṣd wa-l-bayān. Libro de Agricultura*. Ed. by J. M^a Millás Vallicrosa. Seville: Sierra Nevada 95.

14 ‘Abū l-Jayr. (1991). *Kitāb al-filāḥa. Tratado de Agricultura*. Ed. by J. M^a Carabaza. Madrid: MAE-AECI.

15 Ibn Ḥajjāj. (1982). *al-Muqni’ fī l-filāḥa*. Ed. by S. Jarrār and Y. Abū Šāfiya. ‘Ammān : Majma’ al-luḡat al-‘arabiyya al-urduniyya.

16 Al-Ṭīgnārī, Muḥammad b. Mālik (2006). *Kitāb zuhrat al-bustān wa-nuzhat al-aḡḥān. Esplendor del jardín y recreo de las mentes*. Ed. by E. García Sánchez. Madrid: CSIC.

17 Ibn al-‘Awwām. (1988). *Kitāb al-filāḥa. Libro de Agricultura*. Ed. by E. García Sánchez and J. E. Hernández Bermejo. Madrid: Ministerio Agricultura.

18 For further information on the emergence of the Taifa Kingdoms and the groups or dynasties that ruled them, see H. Kennedy. (1997). *Muslim Spain and Portugal: A Political History of Al-Andalus*. London-NY: Longman, pp. 130-153.

19 “Its founder was the qāḍī or judge Muḥammad ibn ‘Abbād, who held supreme power from 1013 to 1042. He was succeeded by his son and grandson, usually known by their honorific titles of al-Mu’tadid (1042-68) and al-Mu’taḍid. (1068-91). Al-Mu’taḍid greatly extended the small kingdom of Seville to the west and south-west, and engaged in fighting against Cordova and Granada in the east”. See W. Montgomery Watt & P. Cachia. (2008). *A History of Islamic Spain*. New Brunswick-London: Aldine Transaction Publishers, pp. 79-80.

20 “In Seville Ibn Baṣṣāl again met ‘Alī ibn al-Lūnquh of Toledo, a doctor and disciple of Ibn Wāfīd, and like him interested in botany and agronomy. He had left his native town shortly before its capture and settled in Seville in 487/1094. He died in Cordova in 499/1105”. See G. S. Colin. (1965). “Filāḥa”. *EF* (II), p. 901.

(Chapter 8), which is clearly one of the most interesting subjects addressed in Ibn al-ʿAwwām's *Kitāb al-filāḥa*. This work —one of the manuscripts of the *Bibliotheca Arabico-Hispana Escorialensis*²⁰— was edited and translated into Spanish by José Antonio Banqueri (1745-1818) in Madrid in 1802.

Later, in the 14th century, a period which was not as prolific as earlier times, there was another important agronomist called Ibn Luyūn (681/1282-750/1349)²³, whose work entitled *Kitāb ibdā' al-malāḥa wa inhā' al-rajāḥa fī uṣūl ṣinā'at al-filāḥa*²⁴ (The Revelation of Beauty and Termination of Excellence in the Basics of Agricultural Skill) was written in *rajaz* meter in order to facilitate its memorisation.

In spite of the fact that most of these agronomic compendiums are mainly devoted to agricultural science, this also includes some knowledge pertaining to other disciplines of the natural sciences —botany, zoology, mineralogy, medicine and pharmacology. Moreover, it is remarkable for its originality and its experimental and didactic nature —all of these books are written in a very simple and precise style. The agronomists themselves experimented —as described in their works— by introducing new species of plants and applying new techniques in their own cultivated lands —as Ibn al-ʿAwwām from Seville did in Aljarafe— and they described each other's experiences. Thus, in his *Book on Agriculture*, Abū l-Khayr cites recommendations from experienced farmers (*ahl al-tajriba*/أهل التجربة)²⁵ for preventing plagues²⁵; he comments on the experiences of some farmers (*ba'd al-fallaḥīn*/بعض الفلاحين) in how to prevent fruit falling from the pistachio tree (*fustuq*/فستق)²⁶; and he reports what experienced people (*ba'd al-mujarribīn*/بعض المجربين)²⁷ said about how to improve the fruit of the vine (*karm*/كرم). Al-Ṭignārī also reports in his agronomic treatise the conceptions of experienced people (*ahl al-tajriba*/أهل التجربة) concerning cultivation periods²⁸.

21 The project of editing and translating Arabic manuscripts in the *Bibliotheca Arabico-Hispana Escorialensis* was promoted by the Maronite Miguel de Casiri (1710-1791). It aimed to make the Andalusian agronomic works useful to Spanish farmers in order to improve the economic and social conditions of the entire population. For further information about the motifs and conditions in which this treatise was edited and translated, see V. M. Barraso. (2011). "El proceso de traducción de dos obras agronómicas: *al-Filāḥa al-Naba'iyya* y *Kitāb al-filāḥa* de Ibn al-ʿAwwām". *MEA* 60: pp. 47-53.

22 "A Tertiary Franciscan from Torvizcón (in the Alpujarra of Granada), he began to study Arabic in Lisbon in 1773. Later, he moved to Madrid in 1779 where he began to work with Casiri (al-Ghazīrī)". *Op. cit.*, p. 49.

23 See F. de la Granja. (1971). "Ibn Luyūn". *EP* (III), p. 855.

24 Ibn Luyūn. (1988). *Kitāb ibdā' al-malāḥa wa inhā' al-rajāḥa fī uṣūl ṣinā'at al-filāḥa. Principio de la belleza y fin de la sabiduría sobre los fundamentos del Arte y la Agricultura*. Ed. by J. Eguaras Ibáñez. Granada: Patronato de la Alhambra.

25 Abū l-Jayr. (1991). *Kitāb al-filāḥa. Tratado de agricultura*, p. 66.

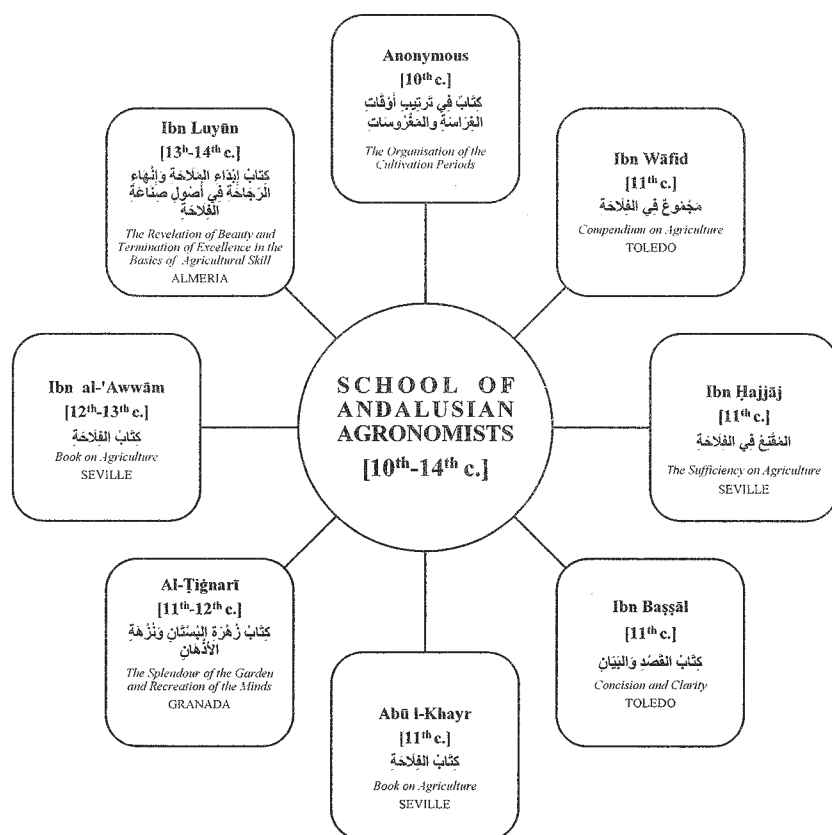
26 *Op. cit.*, p. 76.

27 *Op. cit.*, p. 78.

28 Al-Ṭignārī, Muḥammad b. Mālik. (2006). *Kitāb zuhrat al-bustān wa-nuzhat al-aḥlān. Esplendor del jardín y recreo de las mentes*, p. 51.

The new species grew successfully in the gardens of Al-Andalus, such as *al-Ruṣāfa*²⁹ in the area surrounding Cordova and *al-Ṣumādīhiyya* in Almeria. Among the plants introduced to or cultivated in Al-Andalus were: fruit trees such as banana, apricot, cherry, peach, watermelon and pistachio; ornamental plants including jasmine, morning glory and narcissus; medicinal plants such as anise, caraway and carob; and nutritional vegetables including asparagus, artichoke, carrot and spinach.

Figure 2: Chronological Diagram of the Leading Andalusian Agronomists and their Agronomic Works³⁰



29 “This residence was constructed at the behest of the first emir of the Umayyad dynasty, ‘Abd al-Raḥmān b. Mu’āwiya (756-788), when he settled in al-Andalus subsequent to the massacre that led to the fall of the Umayyad caliphate in the East. He sought to emulate the favourite residence possessed by his grandfather, the caliph Hishām b. ‘Abd al-Mālik, in the dessert of Syria, naming his own construction after this place. Existing documents relating to this cordovan *almunia* provide information on its edification, gardens and exterior areas, along with details on the activities carried out in these spaces”. See E. García Sánchez. (2008). ‘Utility and Aesthetics in the Gardens of Al-Andalus: Species with Multiple Uses’. In: *Health and Healing from the Medieval Garden*. Dendle, P. & Touwaide, A. (eds.). Woodbridge: The Boydell Press, p. 208.

30 A more simplified Spanish-Arabic version of this diagram was included in my master’s thesis *La Agricultura nabatea en el Kitāb al-filāḥa de Ibn al-‘Awwām* which was submitted and discussed at the University of Granada in December 2007. Since there is no English edition of these Andalusian agronomic works, the titles have been translated into English in order to facilitate understanding for non-experts on the Arabic language.

This experimental and practical “spirit” —a common characteristic observed in the Andalusian agronomists’ works— can also be appreciated in the botanical treatise *‘Umdat al-ṭabīb*, whose author declares concerning the plant called “nut of the wind” (*jawz al-rīḥ*/جوز الریح), “I have sown it successfully, and I was able to see its shape and its seeds” (see item 1350)³¹.

Another common characteristic of these agronomists is that they belong to the same scientific community and have the same interests. Their working method is based on what we could call interdisciplinary teamwork. It consists of four basic steps: transcription and translation of the texts —philological work—, and the identification and description of the plants —botanical work.

4. 'UMDAT AL-ṬABĪB FĪ MA'RIFAT AL-NABĀT: 'THE PILLAR BOOK OF THE PHYSICIANS FOR THE KNOWLEDGE OF PLANTS'

4.1. DESCRIPTION AND AUTHORSHIP

‘Umdat al-ṭabīb fī ma’rifat al-nabāt (li-kulli labīb), or *The Pillar Book of the Physicians for the Knowledge of Plants (to every Expert)*³² —hereafter cited as *‘Umdat al-ṭabīb*— is probably the most important and complete botanical work of medieval Islam. This book, which is devoted exclusively to botany, contains a large number of names of plants in different languages —including Arabic, Andalusī Arabic, Romance, Greek, Latin, Berber, Coptic, Persian, Syriac and Nabataean— and it compiles more than five thousand headings or plants, most of which are meticulously classified and described. *‘Umdat al-ṭabīb* has generally been considered to be a botanical dictionary by such scholars as Prof. Federico Corriente³³ and Miguel Asín Palacios³⁴, but it is sometimes called a glossary or a botanical vocabulary. However, this book is neither a glossary of simple drugs nor a classified vocabulary³⁵ —since it does not arrange words under subject headings³⁶— but rather a specialised multilingual dictionary that includes all kind of plants along with their different uses, a multilingual translation of the names of the plants and their

31 وزرغته فأنجب ووقف على صورته وبزره. AbūḤayr al-Isbīlī. (2004). *Kitābu ‘Umdati ṭabīb fī ma’rifati nnabāt likulli labīb*. Ed. by J. Bustamante, F. Corriente and M. Tilmantine. Madrid: CSIC. Vol. I, p. 123.

32 The title of *‘Umdat al-ṭabīb* has been translated into English directly from the Arabic since —as is the case with the other Andalusian agronomic and botanical treatises— there is no English version of the text. The Spanish translation is *Libro Base del Médico para el conocimiento de la Botánica*. See AbūḤayr al-Isbīlī. (2007). *Kitābu ‘Umdati ṭabīb fī ma’rifati nnabāt likulli labīb*. Ed. by J. Bustamante, F. Corriente & M. Tilmantine. Madrid: CSIC. Vol. II.

33 “Nuestra mirada se ha dirigido en primer lugar al más rico diccionario botánico andalusí...”. See F. Corriente. (2000-2001). “El romandalusí reflejado por el glosario botánico de Abulxayr”. *EDNA* 5: p. 96.

34 M. Asín Palacios sometimes considers *‘Umdat al-ṭabīb* to be a botanical dictionary: “Y como una obra de tanta extensión, cual este voluminoso diccionario botánico...”, but we find other references where he calls it a glossary: “...como se puede ver en algunos artículos de este glosario, sin contar...”. See M. Asín Palacios. (1943). *Glosario de voces romances registradas por un botánico anónimo hispano-musulmán (siglos XI-XII)*. Madrid/Granada: CSIC, pp. 16-18.

35 M. A. al-Khaṭṭābī, author of the first modern edition of this work (1990) considers *‘Umdat al-ṭabīb* to be a “botanical vocabulary (*mu’jam pl. ma’ājim*) rather than a dictionary”. See M. A. al-Khaṭṭābī. (1990). *‘Umdat al-ṭabīb fī ma’rifat al-nabāt by Abul Khayr of Seville*. Rabat: Maṭbū‘āt Akādīmiyya al-Mamlaka al-Maġribiyya, pp. 26-27.

36 See John A. Haywood. (1965). *Arabic Lexicography*. Leiden: E. J. Brill, p. 5.

geographical location.

Despite the fact that authorship of both of the manuscripts of this treatise, (1) RAH 243 GAYANGOS XL and (2) BGR 3505 DAL —see section 4.2. below— is attributed to al-Mukhtār b. Ḥasan b. ‘Abdūn al-Baġdādī, who was known as Ibn Buṭlān³⁷ —an oriental Christian priest and physician from Baghdad who died in 458/1066— it seems difficult to support this theory because Ibn Buṭlān is also one of the sources quoted in ‘*Umdat al-ṭabīb*. In this respect, in *jubaynah bayḍā’* (1328) the line “according to Ibn Buṭlān³⁸” appears, which proves that he was not the author but rather one of the sources in this treatise. The first scholar to point out this fact was Prof. M. Asín Palacios in 1943³⁹. He rejected Ibn Buṭlān as the author of ‘*Umdat al-ṭabīb* and defended the hypothesis that this botanical treatise was written by an anonymous Andalusian agronomist or pharmacologist, who probably lived in Seville in the 11th and 12th centuries. In 1990 the Moroccan scholar Muḥammad al-‘Arabī al-Khaṭṭābī, author of the first modern edition of this botanical dictionary, suggested —after studying ‘*Umdat al-ṭabīb* and Abū l-Khayr’s *Kitāb al-filāḥa* (the Book on Agriculture)— that its author could be the Andalusian agronomist Abū l-Khayr from Seville (al-Iṣbīlī), who is also known as “the arboriculturist” (*al-ṣajjār*/الشَّجَّار). According to al-Khaṭṭābī, this assertion is mainly based on the comparison of the linguistic style in both treatises.

From an analysis of the sources in this botanical work, we know that the author of ‘*Umdat al-ṭabīb* was a contemporary of the physician Abū l-Ḥasan b. al-Lūnquh, Ibn Wāfid and Ibn Baṣṣāl. References to these agronomists —particularly to the latter— are quite common. For example, the text contains references such as “Ibn Wāfid pretended that he was informed that this tree grows in the islands of the Arwā sea” (see item 1343)⁴⁰; “it was what I was told by the agronomist Ibn Baṣṣāl” (see item 929)⁴¹; “I saw this plant when Ibn Baṣṣāl was planting it in the garden of the sultan where I met him” (see item 4969)⁴²; and “Ibn Baṣṣāl showed me this specie. He told me that it was brought from Syria and he had sown it successfully in Toledo” (see item 5123)⁴³. The author seems to be one of Ibn Baṣṣāl disciplines, or at least someone very close to him, a botanist or an agronomist who had a great knowledge of these two disciplines and was probably from the city of Seville (see item 1805)⁴⁴, Aljarafe (see items 572, 1381, 3491, etc.)⁴⁵, or elsewhere in the south-west regions of Al-Andalus (see items 937, 969, 985, etc.)⁴⁶.

37 See J. Schacht. (1971). “Ibn Buṭlān”. *EF* (III), pp. 741-742.

38 See Abū Ḥayr al-Iṣbīlī. (2007). *Libro base del médico para el conocimiento de la botánica por todo experto*, p. 187.

39 “Todos los datos que el examen interno de la obra suministra llevan a la conclusión de que su autor no es Ibn Buṭlān de Bagdad, sino un botánico y farmacólogo hispanomusulmán”. M. Asín Palacio. (1943). *Glosario de voces romances registradas por un botánico anónimo hispano-musulmán* (s. XI-XII), p. 11.

40 See Abū Ḥayr al-Iṣbīlī. (2007). *Libro base del médico para el conocimiento de la botánica por todo experto*, p. 191.

41 *Op. cit.*, p. 124.

42 *Op. cit.*, p. 749.

43 *Op. cit.*, p. 773.

44 “This plant grows among us in some of the gardens of Seville”. *Op. cit.*, p. 283.

45 “I saw this plant in Aljarafe, to the west of Seville”. *Op. cit.*, p. 84; “This plant grows in abundance among us in Aljarafe”. *Op. cit.*, p. 202; “This plant is abundant among us in the region of Aljarafe”. *Op. cit.*, p. 557.

Although all of the sources point to the fact that Abū l-Khayr probably died at the end of the 11th century and Ibn Baṣṣāl lived until the beginning of the 12th century, it is possible —if we consider Abū l-Khayr to be the author of *'Umdat al-tabīb*— that he died at the beginning of the 12th century after his master Ibn Baṣṣāl. This hypothesis is based on a reference in *'Umdat al-tabīb* to the “palm tree” (*nakhil*/نخل) where the author declares that what he is writing is what “the excellent master Ibn Baṣṣāl —*rahimahullāh*/رَحِمَهُ اللهُ— told him” (see item 3126)⁴⁷. Therefore, it could be considered that Ibn Baṣṣāl had already passed away before *'Umdat al-tabīb* was completed at the beginning of the 12th century. Another hypothesis is that this treatise was not written by Abū l-Khayr, but by another unknown Andalusian botanist or agronomist who died in the 12th century.

However, the most important issue to take into consideration, and one of the greatest contributions of *'Umdat al-tabīb*, relates to PLANT TAXONOMY (the identification and classification system of plants). This work establishes an innovative classification system based on a primary division called *jins* pl. *ajnās*, (جنس ج اجناس) meaning “genus”, a secondary division *naw'* pl. *anwā'*, (نوع ج انواع) which means “species”, and a third one called *ṣanf*, pl. *aṣnāf*, (صنف ج اصناف) and *ḍarb*, pl. *ḍurūb*, (ضرب ج ضرب) meaning “category” or “variety”. This previously unknown taxonomic system divides plants into groups according to their common external characteristics, vegetative cycles, etc.⁴⁸.

Apart from plant taxonomy —generally at the beginning of the description—, other aspects also included are PHYTOMORPHOLOGY (the physical form and external structure of the plants), LOCATION (*bilād al-'arab*, Al-Andalus, taifa of Seville, etc.) and the origin of the species, the SOURCES of classical, oriental and Andalusī traditions (Dioscorides, Galenus, Hippocrates, al-Dīnawarī, al-Rāzī, Ibn Buṭlān, Ibn Juljul, Ibn Wāfid, Ibn Baṣṣāl, etc.)⁴⁹, and the MULTILINGUAL TRANSLATION of the names of the plants (a large number of names of plants in different languages such as Arabic, Andalusī Arabic, Romance, Greek, Latin, Berber, Coptic, Persian, Syriac, Nabataean, etc.). Finally, some OTHER botanical and agronomic information is included, such as the many uses of the plants (medical, dietetic and ornamental⁵⁰) and grafting techniques⁵¹.

46 “This plant grows in abundance among us in Ḥiṣn al-fath in Seville”. *Op. cit.*, p. 128; “I saw this plant on the mounts to the south of Seville”. *Op. cit.*, p. 138; “I saw this plant in abundance near a small village called Lucalander and Marchena in the region of Seville”. *Op. cit.*, p. 149.

47 The phrase *rahimahullāh*, which literally means in English “Allah have mercy upon him”, is frequently used by Muslims to refer to a late teacher, scholar, leader or relative who was known for his goodness. *Op. cit.*, p. 492.

48 Several examples of the taxonomic system in *'Umdat al-tabīb* have been analysed by E. García Sánchez. (1997). ‘Tradición e innovación en los textos agrícolas y botánicos andalusíes del siglo XII’. In: *Renovación Intelectual del Occidente Europeo (s. XII)*. Estella: 24 Semana de Estudios Medievales, pp. 297-298.

49 Concerning the sources in *'Umdat al-tabīb*, see the long list of sources included in the section *maṣādir al-ḵitāb*, or “sources of the book”, in the introduction to al-Khaṭṭābī's edition. M. ‘A. al-Khaṭṭābī. (1990). *'Umdat al-tabīb fī ma'rifat al-nabāt by Abul Khayr of Seville*, pp. 30-35.

50 For further information on the ornamental uses of the species in *'Umdat al-tabīb*, see E. García Sánchez. (2008). ‘Utility and Aesthetics in the Gardens of Al-Andalus: Species with Multiple Uses’. In: *Health and Healing from the Medieval Garden*, pp. 205-227.

4. 2. MANUSCRIPTS, PUBLISHED EDITIONS AND TRANSLATIONS

Only two manuscripts of *‘Umdat al-ṭabīb* have survived over time. These two unique texts from this work are known as RAH 243 Gayangos Col. XL and BGR 3505 DAL.

The oldest surviving copy is the manuscript from the Gayangos Collection XL which is preserved in the library of the Royal Academy of History (RAH) in Madrid. It was copied by the copyist ‘Abd al-Ġanī ibn Mas‘ūd al-Zamūrī and dated March 1588 (16 *rabī‘ al-tānī*, 996) in Fez. It has 480 pages (from 1r to 243r) and 21 lines per page, and it is written in “Maghribi” script (using two different quills).

The second manuscript is 3505 DAL, and it is preserved in the General Library of Rabat (BGR). It was copied by ‘Abd al-Karīm b. Abī Yu‘zā al-Zarhūnī and dated May 1707 (20 *safar*, 1119) in Rabat. It has 350 pages (from 003 to 353) and 30 lines per page, and the script used is “Maghribi”.

Concerning the modern editions, *‘Umdat al-ṭabīb* was edited for the first time by the Moroccan scholar Muḥammad al-‘Arabī al-Khaṭṭābī, who called it *‘Umdat al-ṭabīb fī ma‘rifat al-nabāt*. It was published by the Royal Moroccan Academic Press (maṭbū‘āt akādīmiyya al-mamlaka al-maġribiyya) in Rabat in two volumes in 1990. Both manuscripts of *‘Umdat al-ṭabīb*—RAH 243 Gayangos XL and BGR 3505 DAL—were used to produce this edition. A second edition was republished in 1995.

The other edition was produced by the Spanish scholars Joaquín Bustamante, Federico Corriente and Mohand Tilmatine. It was published in three volumes by the Spanish National Research Council (CSIC) in Madrid. The Arabic text was published in the first volume in 2004. Later, the Spanish translation was published under the title *Libro base del médico para el conocimiento de la botánica por todo experto* in the second volume in 2007. Finally, a third and last volume of indexes was published in 2010.

4.3. BACKGROUND TO THE STUDY

The literature in Spanish and Arabic on this multilingual botanical dictionary is limited to (1) a glossary by M. A. Palacios in 1943, (2) the introduction to the edition of *‘Umdat al-ṭabīb* by M. ‘A. al-Khaṭṭābī in 1990—see the previous section—and (3) various articles concerning some aspects included in this treatise that have come to light in recent years.

(1) The *Glosario de voces romances registradas por un botánico anónimo hispano-musulmán (siglos XI-XII)* written by the Spanish scholar Miguel Asín Palacios (1873-1944)⁵² in 1943 is thought to be the first work on *‘Umdat al-ṭabīb*. He describes the XL manuscript in the Gayangos Collection in the Library of the Royal Academy of History (RAH) in Madrid, and in his introduction he deals with issues such as its authorship, the sources in the treatise and its importance from a botanical, folkloric and geographical perspective. However, the aim and

51 See AbūlḤayr al-Isbīlī. (2007). *Libro base del médico para el conocimiento de la botánica por todo experto*, p. 123.

52 For further information on the life and work of the Spanish scholar of Islamic studies and the Arabic language and Roman Catholic priest M. Asín Palacios, see E. García Gómez. (1944). “Don Miguel Asín (1873-1944): Esquema de una biografía”

the most important contribution of this work was the study of the Romance ('ajamiyya/عجمية) terminology —mostly names of plants— included in 'Umdat al-ṭabīb.

MANUSCRIPTS			GLOSSARY		EDITIONS	
	RAH 243 GAVANGOS XL	BGR 3505 DAL	M. ASIN PALACIOS	AL-KHAṬṬĀBĪ	BUST/CORR/FILM	
TITLE	عدة الطيب في معرفة النبات عدة الطيب في شرح الاضبط عدة الطيب في معرفة النبات لكل لبيب	عدة الطيب في معرفة النبات لكل لبيب	Glosario de voces romances registradas por un botánico aróbrino hispano-musulmán (siglos XI-XII)	عدة الطيب في معرفة النبات	Kitābu 'Umdat al-ṭabīb fī ma'rifat al-nabāt Libro base del médico para el conocimiento de la botánica por todo experto	
AUTHOR	Abd l-Ḥasan al-Mukhtār b. 'Abdūn al-Baghdādī, known as Ibn Buṭlān	Abū l-Ḥasan al-Mukhtār b. 'Abdūn al-Baghdādī, known as Ibn Buṭlān	Anonymous	Abū l-Khayr al-Isbīlī	Abulḥayr al-Isbīlī	
COPYST	'Abd al-Ganī ibn Mas'ūd al-Zamīrī	'Abd al-Karīm b. Abī Yū'zā al-Zahrānī	Ø	Ø	Ø	
VOLUMES	I (alif-zā') II (kāf-yā')	I (alif-yā')	I	I (introduction+hamza-dāḥ) II ('ayn-yā'-index)	I (Arabic Text) II (Spanish Translation) III, IV (Index)	
DATE	1588 March (16, rabī' al-ḥānī, 996 h.)	1707 May (20, ṣaḡar, 1119 h.)	1943	1st ed. 1990 2nd ed. 1995	2004 (I) 2007 (II) 2010 (III)	
LOCATION	Fez	Rabat	Madrid/Granada (CSIC)	Rabat (mathā'āt al-akādimīyat al-mamlaka al-magribīyya)	Madrid (CSIC)	
PAGES & LINES	480 (1r-243r) 21 lines per page	350 (003-353) 30 lines per page	420	550 (1st ed., I) 1017 (1st ed., II)	857 (I) 785 (II) 1062 (III)	
TYPE OF SCRIPT	Maghribi Script (two different quills)	Maghribi Script	Ø	Ø	Ø	
HEAD ITEMS	Ø	Ø	Ø	0-1598 (I) 1599-2739 (II)	5126 (I) 5126 (II)	

Table 1: The Manuscripts & Modern Editions of 'Umdat al-ṭabīb

A further outstanding study on this botanical treatise (2) is the *muqaddima* or preliminary study included in the first volume of Khattābī's edition of '*Umdat al-ṭabīb*' which was published in Rabat in 1990. In 38 pages written in Arabic, he describes this botanical treatise and the manuscripts, examines its sources and attributes authorship of this botanical work to Abū l-Khayr from Seville.

On the other hand, (3) various research papers have been published, particularly in the last decade, on different subjects relating to '*Umdat al-ṭabīb*'. The two articles in which the Amazigh terminology included in this botanical dictionary is analysed are: 'El léxico amazige contenido en la '*Umdat al-ṭabīb*', published in the journal *AM (Al-Andalus Magreb* 7: 43-64) by the scholars J. Bustamante and M. Tilmatine in 1999, which comprises a selection of the Amazigh botanical words compiled in '*Umdat al-ṭabīb*'; and 'La fitonimia amazige en la '*Umdat al-ṭabīb*', also published in the journal *AM* (8-9: 413-462) in 2000-2001 by M. Tilmatine and J. Bustamante Costa, which contains an alphabetical repertory (329 lexical items) of Amazigh botanical terms included in '*Umdat al-ṭabīb*'.

In the same year, Prof. F. Corriente published another important study on 'El romandalusí reflejado por el glosario botánico de Abulxayr', which translates as 'the Romance names included in the botanical glossary of Abū l-Khayr'. This article was published in the journal *EDNA (Estudios de Dialectología Norteafricana y Andalusí* 5: 93-241) and can be divided into three parts: a) an introduction to the sources for the study on Romance language and some commentaries on the previous studies on '*Umdat al-ṭabīb*', b) the *Repertorio de términos andalusies*, meaning 'the glossary of the Romance terms' arranged alphabetically, and c) a Romance language grammatical sketch based on the analysis of the Romance botanical terms collected in this botanical treatise.

Most recently, Prof. J. Bustamante published an article entitled 'Acerca del término mil, "sonda". Notas lexicográficas', in the journal *AM* (14: 253-267) in 2007. This paper deals with the different uses of the term "*mīl*" —which is an ophthalmological instrument— in '*Umdat al-ṭabīb*'.

Apart from the different linguistic studies on '*Umdat al-ṭabīb*' described above, other works investigating botanical aspects included in this treatise have been published in recent years: 'Tradición e innovación en los textos agrícolas y botánicos andalusies del siglo XII', published by the Spanish scholar E. García Sánchez in 1997, deals with the innovative taxonomic system in '*Umdat al-ṭabīb*'; and 'Utility and Aesthetics in the Gardens of Al-Andalus: Species with Multiple Uses', also published by E. García Sánchez in 2008, provides some allusions included in '*Umdat al-ṭabīb*' to ornamental species that were planted in the gardens of the Andalusian rulers.

4. 4. THE STRUCTURE AND ORDER OF LETTERS IN '*UMDAT AL-ṬABĪB*'

The RAH 243 Gayangos Collection XL manuscript of '*Umdat al-ṭabīb*' —the oldest copy— is divided into two parts which are further subdivided in 29 chapters, one for each letter of the Arabic alphabet —which has 28 letters—, and *lām alif* (lā/ لا) —the letter between *wāw* (و) and *yā* (ي)— which is considered something exceptional within the Arabic lexicography. Most of the 23 headings under this "letter" —from item 5029 to item 5051⁵³— correspond to Romance or

53 Abū l-Khayr al-Iṣbīlī. (2007). *Libro base del médico para el conocimiento de la botánica por todo experto*, pp. 763-765.

Greek names of plants.

SEMITIC ORDER	GRAPHIC ARRANGEMENT		MANUSCRIPTS		E D I T I O N S		
	ORIENTAL	OCCIDENTAL	RAH GAYANGOS XL	BGR 3505 DAL	KHATTABI (1990)	BUST/CORR/TILM (2004/07)	
						[1]	[2]
ا/ء	ا/ء	ا/ء	الھ	الھ	همزة	الف	<i>alif</i> (ʾ)
ب	ب	ب	باء	باء	باء	باء	<i>bāʾ</i> (b)
ج	ت	ت	تاء	تاء	تاء	تاء	<i>tāʾ</i> (t)
د	ث	ث	ثاء	ثاء	ثاء	ثاء	<i>ṭāʾ</i> (ṭ)
ه	ج	ج	جیم	جیم	جیم	جیم	<i>ǧīm</i> (ǧ)
و	ح	ح	حاء	حاء	حاء	حاء	<i>ḥāʾ</i> (ḥ)
ز	خ	خ	خاء	خاء	خاء	خاء	<i>ḫāʾ</i> (ḫ)
ح	د	د	دال	دال	دال	دال	<i>dāl</i> (d)
ط	ذ	ذ	ذال	ذال	ذال	ذال	<i>ḏāl</i> (ḏ)
ي	ر	ر	راء	راء	راء	راء	<i>rāʾ</i> (r)
ك	ز	ز	زاي	زاي	زاي	زاي	<i>zāy</i> (z)
ل	س	ط	طاء	طاء	طاء	طاء	<i>ṭāʾ</i> (ṭ)
م	ش	ظ	ظاء	ظاء	ظاء	ظاء	<i>ẓāʾ</i> (ẓ)
ن	ص	ك	كاف	كاف	كاف	كاف	<i>kāf</i> (k)
س	ض	ل	لام	لام	لام	لام	<i>lām</i> (l)
ع	ط	م	ميم	ميم	ميم	ميم	<i>mīm</i> (m)
ف	ظ	ن	نون	نون	نون	نون	<i>nūn</i> (n)
ك	ع	ص	صاد	صاد	صاد	صاد	<i>ṣād</i> (ṣ)
ق	خ	ض	ضاد	ضاد	ضاد	ضاد	<i>ḏād</i> (ḏ)
ر	ف	ع	عين	عين	عين	عين	<i>ʿayn</i> (ʿ)
ش	ق	غ	غين	غين	غين	غين	<i>ǧayn</i> (ǧ)
ت	ك	ف	فاء	فاء	فاء	فاء	<i>fāʾ</i> (f)
ث	ل	ق	قاف	قاف	قاف	قاف	<i>qāf</i> (q)
خ	م	س	سين	سين	سين	سين	<i>sīn</i> (s)
ذ	ن	ش	شين	شين	شين	شين	<i>šīn</i> (š)
ض	ه	ه	هاء	هاء	هاء	هاء	<i>hāʾ</i> (h)
ظ	و	و	واو	واو	واو	واو	<i>wāw</i> (w)
—	—	—	لام الھ	لام الھ	—	لام الف	<i>lām alif</i> (lā)
غ	ي	ي	ياء	ياء	ياء	ياء	<i>yāʾ</i> (y)

Table 2: The Order of Letters in Separated Manuscripts & Editions

The first part comprises 13 chapters which contain the Arabic letters from *alif* to *zāʾ*: ظ ظ أي: and the second part is subdivided into 16 chapters from *kāf* to *yāʾ*: ي ي أي: ك، ل، م، ن، هـ، ض، ع، غ، ف، ق، س، ش، هـ، و، لا، The order of letters in 'Umdat al-ṭabīb matches the Occidental Graphic Arrangement⁵⁴ —see the comparison in Table 2—, the use of which was

54 「字形の類似したものをもとめて並べる方式で、最も一般的な配列。表 1 に示したことの配列がアラブ全域で使用され、現在の辞書編纂の配列方である。しかし、20 世紀前半まで北アフリカ地域では、少し異なる次の配列使用した。」 For further information in Japanese language on the Occidental Graphic Arrangement, see 高階 美行 (2001) 「アラビア文字」三省堂『言語学大辞典』別巻『世界文字辞典』、東京: 三省堂書店、p. 54.

mainly confined to the regions of Maghreb and Al-Andalus until it was replaced by the Oriental Graphic Arrangement (*mašriqī*/مشرقي).

Apart from the differences in the collating sequences between the Oriental and Occidental arrangements, there are two other variations: the letter *fā'* —transcribed as ف instead of ق— and *qāf* —transcribed as ق instead of ف—.

On the other hand, the BGR 3505 DAL manuscript is also divided into 29 chapters —28 Arabic alphabet letters and the added exceptional *lām alif* letter—, but it is not divided into two main parts, as is the case with the RAH 243 XL Gayangos manuscript.

Each plant is arranged in '*Umdat al-ṭabīb* according to the first letter of its name, normally in Arabic but also in Greek, Romance and Andalusī Arabic. However, concerning the internal structure for each letter, no logical internal order can be detected.

5. THE MULTILINGUAL TRANSLATION OF THE PLANT NAMES IN '*UMDAT AL-ṬABĪB*

5. 1. THE CONCEPTION OF LANGUAGE AND DIALECT: THE TERMS *LUĠA* (لغة), *LISĀN* (لسان), *LAḤN* (لحن) AND *LAḤN* (لحن) IN '*UMDAT AL-ṬABĪB*

This section aims to describe briefly the conception and uses of the Arabic term *luġa* (لغة) between people in the 11th and 12th centuries in Al-Andalus, as well as other linguistic terms included in this botanical dictionary such as *laḥn* (لحن) —does it mean barbarism?— and *laḥn* (لفظ) —pronunciation?— through the analysis of some examples included in '*Umdat al-ṭabīb*.

What is the meaning of *luġa* in this Andalusian botanical treatise? The Arabic term *LUĠA* pl. *-ĀT* (لغة ج ات) has been defined in different dictionaries as (1) “language, idiom”, (2) “dialect, vernacular”, (3) “expression, term, word” [Wehr (1994): p. 1021] in English; “mot, expression, locution, langue, idiom” [Kazimirski (1860): vol. 2, p. 1007] or “accent, prononciation propre à un peuple, à une province, dialecte, patois” [Dozy (1881): vol. 2, part 2, p. 538] in French; and “lengua, dialecto” [Corriente (1991): p. 694] in Spanish. From an analysis of some examples included in '*Umdat al-ṭabīb*, the term *luġa* in this botanical treatise seems to mean “dialect, vernacular, or idiom (which does not make a distinction between language and dialect)” but not language (used in writing) in the modern sense. As such, the author of '*Umdat al-ṭabīb* affirms that “all of these names (Arabic and Romance names of plants) differ from place to place according to the *luġāt* in that country” (see item 2573)⁵⁵. *Luġāt* is understood here as the different spoken Andalusī Arabic and Romance variants within Al-Andalus. He also states that *za'tar* (زعتر), which means “wild thyme” (*Thymus serpyllum* L.), is a dialectal form (*luġa*) of the name *ša'tar* (see item 2196)⁵⁶. Moreover, he sometimes gives the synonym of a plant name in an Arabic regional variant such as *luġat ahl al-šām* or the Levantine Arabic dialect (see item 1843)⁵⁷. He affirms that *nawāsī* (نواسي)

55. وهذه الأسماء كلها إنما هي باختلاف اللغات في البلاد. AbūlḤayr al-Iṣḥāqī. (2004). *Kitābu 'Umdati ṭṭabīb fī ma'rifati mabāt likullī labīb*, p. 287.

56. زعتر: لغة في صغتر. *Op. cit.*, p. 231.

57. ذرائع: الخوخ بلغة أهل الشام. *Op. cit.*, p. 193.

) is the kind of “grape” known as *mansanāl* (منسنال), which is called *layrānī* (ليراني) in the “lūga” of Seville (see item 3089)⁵⁸, in other words, the Romance variant of Seville. Although in all these examples the term *lūga* seems to have the meaning of “dialect” or “regional spoken variant”, one exception is worthy of mention in relation to Latin, when he states that “the correct term is *šišanburuh* (ششنبوره) in *lūgat LT* (لغة لط), commonly known as *sunbar* (سنبر) by the ordinary people in our country (‘*āmmatuna*/عامتنا)⁵⁹ and sometimes called *ṣandal* (صندل)” (see item 1632)⁶⁰. However, *laḥīnī* is understood here as Romance.

Do these Andalusian agronomists and botanists distinguish between language and dialect? And how do they see languages such as Greek, Persian and Arabic in comparison to Andalusī Arabic or Romance, both nowadays considered to be dialects derived from Arabic and Latin respectively? It seems that there was no distinction between language (written domain, standard language, high variety) and dialect (spoken domain, colloquial language, low variety) in the modern criteria. Romance and Andalusī Arabic plant names are introduced in the same way as Greek and Arabic names, that is, by the phrase “it is called / known in” (*yusammā, yu’raf bī-*يسمى، يعرف بـ) followed by the name of the language, or simply the preposition “in” (*bi-*بـ) followed by the name of the language in which the synonym is given, without calling them —except for the example in Latin described above— *lūga*.

Finally, a fourth sense of *lūga* is (4) —if preceded by the word “science” (‘*ilm*/علم) — “lexicographie” and —if preceded by “people” (*ahl*/أهل)— “lexicographes” [Kazimirski (1860): vol. 2, p. 1007] in French, and “lexicografía, filología” [Corriente (1991): p. 694] in Spanish. This meaning of *lūga* is seen in “*zar*” (زرع), the name given to “wheat leaves” (*waraq al-ḥanṭa*/ورق الحنطة) or to the “wheat” itself: “It is said in the *lūga* (we understand here lexicography, lexicology or even compiling works or dictionaries) that...” (see item 2211)⁶¹.

Apart from the term *lūga*, what other linguistic terms can be found in ‘*Umdat al-ṭabīb* and what do they mean? Did these agronomists and botanists use other linguistic terms meaning language or dialect?

The other linguistic terms included in ‘*Umdat al-ṭabīb* are *lisān*, *laḥn* and *lafẓ*. *LISĀN* pl. *ALSINA*, *ALSUN* (لسان ج ألسنة، ألسن) has two basic meanings: (1) “tongue” and (2) “language” [Wehr (1994): p. 1016] in English; “langue” and “parole, discours, langage” [Kazimirski (1860): vol. 2, p. 991] in French; and “lengua” and “lenguaje” [Corriente (1991): p. 696] in Spanish. *Lisān* in ‘*Umdat al-ṭabīb* refers exclusively to the first meaning, that is, “tongue” —particularly referring to an animal’s tongue—, and it is normally used in a comparative sense to describe the physical or external shape of a plant. For example, one of the saxifrage plants is described

58 وهو الليراني بلغة إشبيلية. *Op. cit.*, p. 353.

59 The references to the language of *al-‘āmma* pl. *al-‘awwām* (common, ordinary people) in opposition to “how it is called ‘*indanā*” (between us) are numerous in this treatise. It refers to the medieval *luḡāt al-‘āmma* (modern *luḡāt al-‘āmmiyya*, *al-dārīja* or *al-laḥjāt*).

60 والصواب في لغة لط. AbūlḤayr al-Isbīlī. (2004). *Kitābu ‘Umdati ṭṭabīb fī ma’rifati mabāt likullī labīb*, p. 160.

61 يُقال في اللغة. *Op. cit.*, p. 231.

as having leaves which are similar in shape to tongues (*alsun*/السن) (see item 1624)⁶²; and the plants called “tongue of birds” (*lisān al-‘aṣāfir*/لسان العصافير) (see item 1919)⁶³, and “tongue of kid goat” (*lisān al-jadī*/لسان الجدي) (see item 2155)⁶⁴ are so-called because they look like the tongues of these animals. This sense of *lisān* (tongue) has been found in al-Ṭignarī’s agricultural work entitled *Kitāb zuhrat al-bustān wa-nuzhat al-aḡhān*: citing *Al-filāḡa al-nabaṭiyya* (the ‘Nabataean Agriculture’) and Qusṭus, he states that the presence of the plant “arrowhead, bull tongue” (*Sagittaria lancifolia* L.) —in Arabic *lisān al-ṭawr*⁶⁵— is an element that could indicate the proximity of water and humidity in cultivated land; another example in al-Ṭignarī’s work is much more interesting: concerning the best qualifications of a herdsman (*rā’ī*) in terms of caring for sheep (*al-ṣiyāḡ*), he says that it is preferable for him to be generous, brave, patient and *ṭaliq al-lisān* (have a fluent tongue)⁶⁶. Moreover, in these treatises we have not found any trace of the term *lisān* used to describe the Romance language of *al-‘ajam*, which was used by non-Arabs and assimilated bilingual speakers *musta’ribūn* (those who have become like Arabs)⁶⁷.

Another linguistic term included in ‘*Umdat al-ṭabīb is LAḤN* pl. *ALḤĀN, LUḤŪN* (لحن ج) (الحن، لحنون). It has two senses: (1) “air, tune or melody”; and (2) “grammatical mistake, solecism, or barbarism”. The verb *LAḤANA* means “to speak ungrammatical Arabic (interspersed with barbarisms)” [Wehr (1994): p. 1011] in English; it means “son, mélodie, accord, accents, accents de voix” and “manière de parler ou prononcer particulière à un pays, à un endroit, provincialisme, faute de prononciation, barbarisme, cacophonie” [Kazimirski (1860): vol. 2, p. 979] in French; and “son, melodía, acorde” and “acento, modulación, sentido, barbarismo, incorrección del lenguaje” [Corriente (1991): p. 686] in Spanish. Abū l-Khayr affirms that *tūt ‘arabī* or mulberry (*Morus nigra* L.) is called *tūt* in Andalusī Arabic, written *bi-l-ṭā’* (ث), which is correct, and *tut* is *lahn*, a solecism (see item 1150)⁶⁸. Another example of this term in ‘*Umdat al-ṭabīb is ḡurf* (item 1664), which is “garden pepper cress” (*Lepidium sativum* L.) which is “wrongly” (*lahn*) called *bajbullin* (بجبلين) by the peasants in Romance, though the correct name is *baḡbullin* (بجبلين)⁶⁹.

62 وشكله كشكل الألسن. *Op. cit.*, p. 153.

63 وفي داخله لب كلب لسان العصفور رقة وشكلا. *Op. cit.*, p. 198.

64 وتسمى أيضا لسان الجدي لشبه ورقها بالسنة الجداء شكلا ولونا. *Op. cit.*, p. 226.

65 إن العليق والسعد والبردي ولسان الثور... وكل ذلك يدل على قرب الماء ورطوبة الأرض. Al-Ṭignarī, Muḡammad b. Mālik. (2006). *Kitāb zuhrat al-bustān wa-nuzhat al-aḡhān. Esplendor del jardín y recreo de las mentes*, p. 92.

66 وأفضل ما يستعمل في رعي الشياه كل قصير خفيف كريم طلق اللسان. *Op. cit.*, p. 104.

67 It means “mozárabe” in Spanish. We find seven different definitions of mozárabe in the prestigious Spanish dictionary of the RAE (Royal Spanish Academy): (1) “Se dice del individuo de la población hispánica que, consentida por el derecho islámico como tributaria, vivió en la España musulmana hasta fines del siglo XI conservando su religión cristiana e incluso su organización eclesiástica y judicial” & (5) “Se dice de la lengua romance, hoy extinta, heredera del latín vulgar visigótico, que, contaminada de árabe, hablaban cristianos y musulmanes en la España islámica”. In our opinion, these two definitions illustrate the common lack of scientific thoroughness. In the first definition, it is not so clear that this population preserved their identity only until the end of the 11th century, and the affirmation in the fifth definition concerning the Romance language that Romance was the language descended from Vulgar Latin “contaminated” by Arabic seems to be inappropriate since the word “contaminated” has a negative sense. Instead of that, we suggest “in which Arabic words abound”.

68 لِس (أندلسية) ثوث بالثناء، وهو الصواب، والثوت لحن. Abū l-Jayr al-Iṣṭīlī. (2004). *Kitābu ‘Umdati ṭṭabīb fī ma’rifati mabāt li-kullī ṭabīb*, p. 107.

69 والنوع الآخر تسميه أهل الباديثا بجبلين، وهو لحن، والصواب بأدبلين. *Op. cit.*, p. 171.

The last term to be analysed here is *LAFẒ* pl. *ALFĀẒ* (لفظ ج ألفاظ), which means “sound-group, phonetic complex, expression, term, word, wording, formulation, articulation, enunciation, pronunciation” [Wehr (1994): p. 1024] in English; “parole, mot” [Kazimirski (1860): vol. 2, p. 1010], “prononcer d’une manière élégante” [Dozy (1831): vol. 2, part 2, p. 541] in French; and “pronunciación, dicción, palabra, expresión” [Corriente (1991): p. 695] in Spanish. The term *lafẓ* appears to mean word or spoken word in ‘*Umdat al-ṭabīb*, or it could even be translated as language: it is written here that the name *qannāmmūmun* (قننمومن) is derived from the word (*lafẓ*) “cane” in Romance (see item 1929)⁷⁰. We also find *lafẓ* —although in its plural form (*alfāẓ*/الفاظ)— in al-Ṭignarī’s agricultural work when he states that “everything is connected in the world as concepts (*ma’ānā*) and words (*alfāẓ*), branches and roots, or fruit and tree are attached”⁷¹.

Finally, it should be noted that none of these terms have been found in Abū l-Khayr’s *Book on Agriculture*.

5. 2. THE CLASSIFICATION OF THE LANGUAGES IN ‘UMDAT AL-ṬABĪB

The translation of the names of plants in the various different languages is possibly the most interesting subject in ‘*Umdat al-ṭabīb*. This linguistic information provides us with an excellent source, not only for lexical studies as we have seen in the case of the Amazigh or “Romandalusi” terminology compiled in ‘*Umdat al-ṭabīb*, but also illustrating the sociolinguistic situation of the Iberian Peninsula in the 11th and 12th centuries.

This multilingual translation is usually included in the last part of each item and follows the taxonomic classification, the description of the physical and external structure of the plant and its geographical location. Although there is not a translation of the plant names in every item, and the number of languages into which the plant name is translated varies from item to item —normally it ranges between three and six—, ‘*Umdat al-ṭabīb* would have been considered an unprecedented treatise that had a considerable bearing on subsequent works. For instance, the treatise of simples entitled *Al-Jāmi’ li-ṣifāt ashtāt al-nabāt wa-durūb anwā’ al-mufradāt* (the Compendium of the properties of diverse plants and various kinds of simple drugs) which is attributed to Abū ‘Abd Allāh Muḥammad al-Idrīsī (1100, Ceuta - 1168) also gives names for each drug in a great number of languages, sometimes as many as twelve (Syriac, Greek, Latin, Persian, Berber, Romance, Turkish, Kurdish, etc.).

We can distinguish between two main groups of languages in ‘*Umdat al-ṭabīb*. The first main group includes 13 languages: Arabic, Andalusī Arabic, Romance, Ancient Greek, Byzantine Greek, Latin, Frank, Berber, Coptic, Hindi, Persian, Syriac and Nabataean.

This first ‘Main Languages Group’ can be further subdivided into four groups based on common features:

70. إقنامومن، مأخوذ من اسم القصب بلفظ المعجم. *Op. cit.*, p. 200.

71. فالعالم مرتبط بعضه إلى بعض كتعلق المعاني بالألفاظ والفرع من الأصل والثمر من الشجر. Al-Ṭignarī, Muḥammad b. Mālik. (2006). *Kūb zuhrat al-busiān wa-nuzhat al-aḡhān. Esplendor del jardín y recreo de las mentes*, p. 29.

1. Languages of common use in Al-Andalus (Diglossia and Bilingualism)

- (1) ARABIC or *'arabiyya* (ع/عربية)
- (2) ANDALUSI ARABIC or *andalusiyya* (ع/عربية)
- (3) ROMANCE or *'ajamiyya* (لس/اندلسية)

2. Languages from Classical Tradition Sources

- (4) ANCIENT GREEK, *yūnāniyya* (ي/يونانية) or *igrīqiyya* (اغريقية)⁷²
- (5) BYZANTINE GREEK or *rūmiyya* (ر/رومية)
- (6) LATIN or *lafīnī* (ل/لطيني)
- (7) FRANK or *ifranjiyya* (فج/افرنجية)

3. Languages without any apparent correlation

- (8) BERBER or *barbariyya* (بر/برية)
- (9) COPTIC or *qubṭiyya* (قط/قبطية)
- (10) HINDI or *hindīyya* (هد/هندية)
- (11) PERSIAN or *fārisiyya* (فس/فارسية)

4. Semitic Languages from Classical Oriental Sources

- (12) SYRIAC or *sūryāniyya* (س/سورانية)
- (13) NABATAEAN or *nabaṭiyya* (نط/نبطية)

A second group of 'Minority Languages and Spoken Linguistic Variants' found in *'Umdat al-ṭabīb* includes:

HEBREW (*'ibrāniyya*/عبرانية)⁷³

(The language of) CEYLON (*sarandīb*/سرنديب)

(The language of) Peasant WOMEN (*nisā' ahl al-bādiya*/نساء أهل البادية)

(The language of) HIGHLANDERS (*ahl al-jabal*/أهل الجبل), PEASANTS (*ahl al-bādiya*/أهل البادية), FARMERS (*ahl al-zirā'a*/أهل الزراعة) and CITY PEOPLE (*ahl al-hawāḍir*/أهل الحواضر).

72 The Ancient Greek names of plants are usually introduced in *'Umdat al-ṭabīb* by the Arabic letter *yā'* (ي) which means *yūnāniyya* (يونانية) or the expression *bi-l-yūnāniyya* (باليونانية), which means, "in Greek language". Nevertheless, this expression is replaced in a very few cases by the expression *bi-l-igrīqiyya* (بالاغريقية) which also means "in Greek language". See items 3020 (*muṣṭahā*/مشتهى) and 3602 (*gallaṣ*/غالش). AbūlḤayr al-Iṣṭīfī. (2004). *Kitābu 'Umdati ṭṭabīb fī ma'rifati nnabāt likullī labīb*, pp. 338 & 431.

73 There are three references to Hebrew words in *'Umdat al-ṭabīb*: *salam* (مسالم), *simṣim* (سمسيم), and *šāl.m* (شالم). See items 1936 (*dawsar*/دوسر), 4511 (*simṣim*/سمسيم) and 4885 (*šaylam*/شيلم). *Op. cit.*, pp. 202, 510 & 555.

5. 3. THE MULTILINGUAL BOTANICAL TERMINOLOGY FROM *ALIF* TO *ṢĀ'* (Vol. I) AND *KĀF* TO *YĀ'* (Vol. II): PERCENTAGES

In this section, we have attempted to quantify the terminology in the various different languages in *'Umdat al-ṭabīb* in order to determine the importance of each of these within the work, as well as to discover which were the main sources, both oral and scientific, and which were the secondary sources. We must point out, given that on occasion more than one term is provided for each language, particularly in the case of synonyms in Greek, Romance and Arabic, and taking into account the errors made by the author of the treatise in identifying the language of some plant names, something which is not uncommon in the case of a text from the 11th-12th c., that the resulting percentages of terminology in each language and volume are not completely accurate in real terms. However, we do not believe that this detracts from the value of this study, which provides very relevant data concerning the multilingual botanical glossary in this treatise.

It can be deduced from the study that if we consider the importance of each language based on parameters of higher or lower frequency throughout the work, the classification of the languages from greater to lesser importance would be as follows: Ancient Greek, Romance, Persian, Arabic, Syriac, Byzantine Greek, Berber, Andalusī Arabic, Nabataean, Latin, Frank, Coptic and Hindi. Table 3 shows the total number of terms counted, as well as the percentages for each language and volume.

Groups/Languages		Number of occurrences in separated languages & volumes		Percentages of terminology in separated languages & volumes		Percentages %
		[1]	[2]	[1]	[2]	
1	Arabic	140	166	12	11	11.5
	Andalusī Arabic	58	80	5	5	5
	Romance	187	276	15.5	18.5	17
2	Frank	17	24	1.5	1.5	1.5
	Byzantine Greek	102	103	8.5	7	7.5
	Ancient Greek	272	352	23	23	23
	Latin	24	33	2	2	2
3	Berber	96	107	8	7	7.5
	Coptic	13	9	1	0.5	0.8
	Hindi	5	12	0.5	1	0.7
	Persian	147	175	12.5	11.5	12
4	Syriac	100	130	8.5	8.5	8.5
	Nabataean	25	54	2	3.5	3
Total		1186	1521	100	100	100

Table 3: Percentages of Multilingual Terminology in Separated Languages

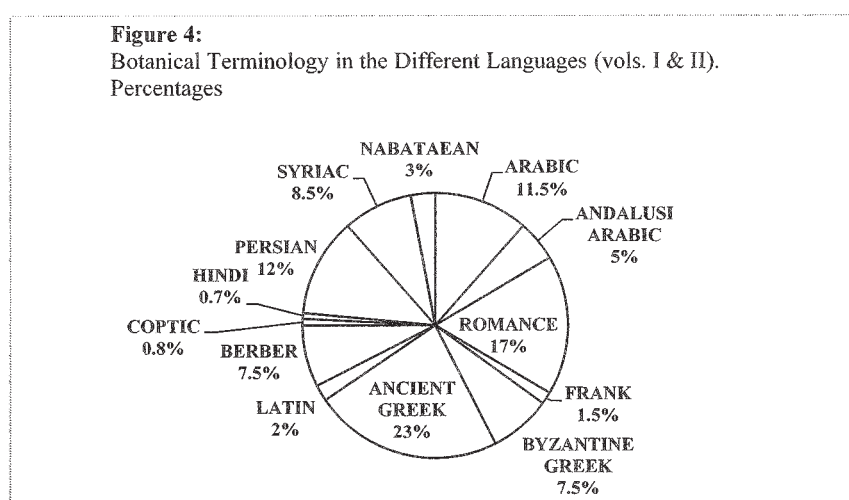
As can be observed above, although the number of occurrences counted is greater in volume [2] (the number of chapters and letters included is also greater, as we have seen in section 4.4. on the structure and order of letters in *'Umdat al-ṭabīb*), the percentages are similar in both volumes, which indicates a certain level of uniformity and equilibrium across the two volumes into which the treatise is divided.

Greek terminology (the main sources of which are Dioscorides, Galen and Hippocrates) is the

terminology which appears most frequently in the work, and it is the only language which exceeds 20% of the total. As a result, it can be considered to be the main language of scientific reference for botanical terms in this multilingual botanical dictionary.

Similarly, the large number of terms in the different variants of Romance, at approximately 17% of the total (a level which is not found in any other Andalusian agricultural or botanical treatise), mean that it should be taken to be the main language for recording common names of plants, in other words, those arising from oral tradition and passed down through the knowledge of the common people, peasants, farmers, etc..⁷⁴

Figure 4 shows a clearer representation of the percentage of botanical terminology in each language.



The percentage of the scientific botanical glossary in Arabic, Persian and Byzantine Greek must also be taken into account: the terminology in Arabic comprises 11.5% of the total, while Persian represents 12% and Byzantine Greek 7.5%. The Arabs, although they were the enemies of the Persians (*fārisī*) and Byzantines (*rūm*) from a religious point of view, did not consider them barbarians as they did the Franks and the Western Europeans; on the contrary, as civilisations they treated them as equals and included them within the group of peoples which had a scientific

74 Peasants (*ahl al-bādiya*/أهل البادية), Highlanders (*ahl al-jabal*/أهل الجبل), Farmers (*ahl al-zirā'a*/أهل الزراعة) and City People (*ahl al-ḥawāḍir*/أهل الحواضر), along with the Common People (*nās*/ناس), are the anonymous oral-tradition sources in *ʿUmdat al-ṭabīb*.

75 The natural supposition that *Ifrañj* in principle means “the Franks” is not supported by the actual usage of historical writers who refer to a Christian king of north-western Spain as one of the kings of *Ifrañja*, but also to a raid on *bilad al-ṛum* which is clearly the Narbonne region (*Aʿmāl*, ii, 11-2). The earliest use of the word *Ifrañj* by a Spanish writer seems to be that of Ibn al-Ḳutiyya (d. 367/977) who applies it to the inhabitants of the Saragossa region. J. F. P. Hopkins. (1971). “Ifrañj”. *EP* (III), p. 1046.

tradition, alongside the Greek, Arabic and Chaldean traditions (8.5% of the terminology is in Syriac). This world view may explain why the percentages shown of terminology in *ifranjiyya*⁷⁵ and Latin are just 1.5% and 2% respectively, which along with Nabataean (3%), Coptic (0.8%) and Hindi (0.7%) are the least relevant languages in the treatise from a quantitative point of view. Furthermore, considering the low incidence of Latin terms in *'Umdat al-ṭabīb*, it is difficult to accept the theory advanced by some researchers that Latin must have remained in use as a cultural language until a late period.

Nevertheless, the fact that terms in Andalusī Arabic account for just 5% of the total seems to confirm the theory that Arabic never replaced Romance as a colloquial language, even after the Almoravids arrived in the Iberian Peninsula, which seems quite probable if we compare the percentages of the botanical glossary in Romance (17%) and Andalusī Arabic (5%), both of which are languages used for recording oral tradition.

Finally, with regards to the Berber language (7.5%), which is also used for recording oral-tradition terms, it appears that the author of this botanical dictionary "may, as part of his servitude, have accompanied al-Mu'tamid ibn 'Abbad from Seville when he was exiled in Aḡmāt (near Marrakech) by the Almoravids"⁷⁶, and he therefore may have recorded the spoken Berber terms there.

5. 4. ZARĀWUND KHURĀSĀNĪ ("PURPLE BETONY"): PLANT TAXONOMY, MEDICAL USES AND MULTILINGUAL SYNONYMS

In this section, we have presented and briefly analysed an example of the description of one of the species included in *'Umda al-ṭabīb* so that the reader can visualise and appreciate in a real sense the methodology pursued in describing the plants and how the names are presented in the different languages. Parallel to this, we have also provided a translation from the Arabic into Japanese, which even further facilitates the understanding of the example in question.

The text analysed is the description of a plant called ZARĀWUND KHURĀSĀNĪ which is found under the letter *zāy* as *زراوند خراسانی* in the first volume (item 2243)⁷⁷; its scientific name is *Stachys officinalis* (L.) Trevisan (Family: *lamiaceae*), and it is commonly known as "Purple Betony". Three parts can be distinguished:

2243. 「アリストロキア (ウmanosズクサ)」 ٢٢٤٣. زَرَاوُنْدُ خُرَاسَانِي

أصل البتُّوقَة، عن بعض الرواة، وهو نوع من الكمادريوس. ونوع آخر من الزَرَاوُنْد هو الماميران، في م، ويسمى الزراوند ي ارسطولوخيا، وأرسطو هو الفاضل، ولوخيا المرأة النفساء، اي النافع للنفساء او الفاضل للنفساء، لأنه يتقيها من عفونة الدم ويُدِر الطمث، ويسمى فس مُسْمَقَر، ر سَنَبَسِي، عَج مُسْمَقُورَه، بر مُسْمَقُرَان، ع زَرَاوُنْد، وهو سرياني معرَّب، ويعجمية الثغر قَلْبَجُولَه، ويسمى أيضا الاسْتَرْخِيَّة، س زُنُوبَد، ويقال في بعض اللغات شَجَرَة بَن رُسْتُم، ويسمى أَفْسِيُوس.

アリストロキアは、イヌゴマ (*banturqah*) の祖先であり、*kamādaryūs* の一種である。*Zarāwund* の他の種は、*م* の文字 *māmīrān* である。ギリシア語：ギリシアでは、馬の鈴草が腐敗した血を浄化し、月経を戻す効用があり、臨産婦が摂取することが良いとされていたことから、*arsafūlūkhīya* (*arsafū* : 優れている、*lūkhīya* : 臨産婦) と呼ばれていた。ペルシア語：*musmusqār*、ローマ語：*sinbisī*、ロマンス語：*musmusqūrah*、ベルベル語：*musmuqurān*、アラビア語：*zarāwund*、マルカスペリオール (サラゴサ周辺) のロマンス語 *qalabajūlah*、*asturkhiyyah*、シリア語：*zunūbaq*、そのほか、いくつかの方言では、*šajrat ban rustum* や *aqsayūs* と呼ばれていた。

Almost as a general rule, even in the simplest descriptions such as in the example illustrated, the first part of the description consists of the taxonomic classification of the plant, and the sources from which the information was gathered are provided, in this case “some transmitters”⁷⁸. The root is described as being betony (*banturqah*), and the species (*naw*) as germander (*kamādaryūs*), and another species of the same plant is celandine (*māmīran*).

The second part of the description contains, in many cases, the practical uses of the plant. In the case of *zarāwund khurāsānī*, it is a plant with emmenagogue properties, used in traditional medicine for stimulating blood flow and causing menstruation in women.

Lastly, a rich catalogue of synonyms of the name of the plant in different languages is provided. In this example, moreover, these are also the languages which, according to the study carried out, are used most frequently, and which, as a result, are considered to be the

76 See M. Tilmatine and J. Bustamante Costa. (2000-2001). ‘La fitonimia amazige en la ‘Umdat al-ṭabīb’. AM 8-9: p. 414.

77 AbūḤayr al-Iṣṭīlī. (2004). *Kitābu ‘Umdati ṭṭabīb fī ma‘rifati nnabāt likullī labīb*, p. 237.

78 Transmitters (*ruwāh/رواه*), along with physicians (*aṭṭibā/أطباء*), apothecaries (*sayādila/صيدالة*), herbalists (*šajjārūn/شجّارون*) and commentators (*mufasssīrūn/مفسّرون*), are the anonymous scientific sources in ‘Umdat al-ṭabīb. A more detailed study on these anonymous scientific sources and the oral-tradition sources of this botanical treatise will be published in the coming months.

most relevant. From among the Group 1 languages, those which are believed to have been in common usage in Al-Andalus (see section 5.2. on the 'classification of the languages in *'Umdat al-ṭabīb*'), we find the Arabic term (ع) *zarāwund* (زراوند), which is described as arabized Syriac (*suriyānī mu'arrab*), and the Romance term (عج) *musmuqūrah* (مسمقوره), which is *qalabājūla* (قلبجوله)⁷⁹ in Romance of the Upper March (عجمية الثغر)⁸⁰. From Group 2, which includes terms taken from classical sources, we have the terms *arsaṭūlūkhīyā* (ارسطولوخيا) from Greek (ι) and *sinbistī* (سنبيسي) from Byzantine Greek (ρ). Group 3 is represented by terms in Berber (بر) *musmuqurān* (مسمقران) and Persian (فس) *musmuqār* (مسمقار), while Syriac (س) *zunūbaḡ* (زنوبذ) from Group 4 completes the list of synonyms in languages identified in the work. Other names, for which the language has not been identified (*yuqāl fī ba'd al-lughāt, yusammā*) are *šajrat ban rustum* (شجرة بن رستم) and *aqsayūs* (اقسيوس).

6. CONCLUSIONS

Between the 10th and 14th centuries in Al-Andalus, a great number of scientists appeared who carried out important work in the different branches of natural science (botany, medicine, pharmacology, agriculture, geology, etc.), some of whom devoted themselves exclusively to the study of agriculture. In the 11th century, in the taifa of Seville, they formed what we know as the School of Andalusian Agronomists, and their treatises, although of a predominantly agronomic nature, included other knowledge, and they contributed decisively to the emergence and subsequent evolution of peninsular agriculture. Although these works are compilations of agricultural knowledge from the classical, Mesopotamian and Oriental Arabic traditions, they also record the experiences both of Andalusian farmers and of the agronomists themselves. As such, all of these works have a unique personality and should be taken into consideration for their new contributions to sowing methods, irrigation systems, grafting techniques and taxonomic classification, among other things.

Among these agronomic works, we find the agricultural treatise by Ibn Bassal entitled *al-Qaṣd wa-l-bayān* (Concision and Clarity) and *Kitāb al-filāḥa* (the Book on Agriculture) by Abū l-Khayr (11th-12th c.). The latter author has been attributed as having written the botanical work *'Umdat al-ṭabīb fī ma'rifat al-nabāt* (The Pillar Book of the Physicians for the knowledge of plants). This is the first and most comprehensive exclusively botanical Andalusian work from the Middle Ages. It

79 "QALABAČÓLA "aristoloquia": GB 55 refleja este romancismo con sufijo dim., pero no es actualmente aceptable su supuesto étimo lt. *capacium*. No reparó en cambio en la forma no dim., y al parecer masc., >qlbs< de B269, pasaje omitido por XB". See F. Corriente. (2000-2001). 'El romandalusí reflejado por el glosario botánico de Abulxayr', p. 176.

80 "Al-Andalus had no northern frontier in the modern sense. Between the area securely held by Muslim and that securely held by the various Christian states was a tract of land more loosely held and merging into a no-man's land. These were the Marches. The Muslim defence was based on Saragossa for the Upper March, on Toledo for the Middle March, and on Mérida for the Lower march". See W. M. Watt & P. Cachia. (2008). *A History of Islamic Spain*, pp. 27-28..

stands out mainly on account of establishing an innovative plant classification system and due to its significant contribution in terms of botanical lexical terms in different languages.

In this study, which focuses on the linguistic aspects of the work, we have attempted to quantify the botanical terminology, something which had never before been done in any prior study about *‘Umdat al-ṭabīb*, in each of the 13 main languages included in the two volumes of the work: from *alif* to *zā*’ (1) and *kāf* to *yā*’ (2). As a result of this study, the following general conclusions can be drawn.

It was observed that names in ancient Greek, Arabic and Persian (scientific names) and in Romance (common names), make up the main group of languages for the botanical terminology, largely the names of plants but also place names, the names of tools, etc., in this multilingual botanical dictionary. Occurrences of terminology in Romance and Greek stand out in particular, at 17% and 23% of the total respectively.

Furthermore, a second group of languages can be identified, and although these do not account for such high percentages as the group of what are considered to be main languages, (more than 10%), they must be taken into account. This includes terminology in Syriac, Byzantine Greek (written scientific sources), Berber and Andalusī Arabic (oral-tradition sources), each of which represent between 5% and 10% of the total.

It is also important to highlight the low relevance of terminology in the rest of the languages (less than 3%): Nabataean, Latin, Frank, Coptic and Hindi.

On the basis of the information above, *‘Umdat al-ṭabīb* may be considered (1) as a source for the study of Romance and Andalusī Arabic —particularly since the number of written sources is very limited—, (2) as a source for the recovery of the popular and traditional knowledge of plants (names, locations, uses, etc.) and (3) as a source for the study of the sociolinguistic situation of the Iberian Peninsula in the 11th and 12th centuries.

Finally, in relation to this third aspect, it is important to stress the valuable information that this treatise provides in terms of the different linguistic identities and communities in the 11th and 12th centuries, as well as the interferences which arose between these. This diversity of languages in Andalusian society and their interferences, particularly between Arabic, Andalusī Arabic and Romance, will be analysed in greater detail in a future study.

BIBLIOGRAPHY

- AbūlḤayr al-Iṣbīlī. (2004-2010). *Kitābu ‘Umdati ṭṭabīb fī ma‘rifati nnabāt likullī labīb*. Edition with Spanish translation and notes by J. Bustamante, F. Corriente & M. Tilmantine. Madrid: CSIC.
- Abū l-Jayr. (1991). *Kitāb al-filāḥa. Tratado de agricultura*. Edition with Spanish translation and notes by J. M. Carabaza. Madrid: MAE-AECI.
- Asín Palacios, Miguel. (1943). *Glosario de voces romances registradas por un botánico anónimo hispano-musulmán (s. XI-XII)*. Madrid/Granada: CSIC.
- Balty-Guesdon, M. G. (1992). “Le Bayt al-Ḥikma de Bagdad”. *Arabica* 39: pp. 131-150.
- Barraso, Víctor M. (2011). “El proceso de traducción de dos obras agronómicas: *Al-filāḥa al-*

- nabaṭiyya y Kitāb al-filāḥa* de Ibn al-'Awwām'. *MEAH* 60: 39-56. <http://digibug.ugr.es/handle/10481/18613>
- Brinkmann, Stefanie, Wiesmüller, Beate (eds.). (2009). *From codicology to technology: Islamic manuscripts and their place in scholarship*. Berlin: Frank & Timme.
- Bustamante Costa, Joaquín. (2007). 'Acerca del término mil, "sonda". Notas lexicográficas'. *AM* 14: 253-267.
- Bustamante Costa, Joaquín & Tilmatine, Mohand. (1999). 'El léxico amazige contenido en la 'Umdat aṭṭabīb'. *Al-Andalus Magreb* 7: 43-64.
- Carabaza Bravo, J.M. & García Sánchez, E. (2009). 'Studies on the agronomy of Al-Andalus'. *Revue des Mondes Musulmans et de la Méditerranée* [Online] 126.
- Carabaza Bravo, J. M., García Sánchez, E., Hernández Bermejo, E. & Jiménez Ramírez, A. (2004). *Árboles y arbustos de Al-Andalus*. Madrid: CSIC.
- Columela, Lucio Junio Moderato. (1988). *De los trabajos del campo*. Ed. by Antonio Holgado Redondo. Madrid: Siglo XXI de España Editores.
- Corriente, Federico. (2008). *Dictionary of Arabic and Allied Loanwords*. Leiden-Boston: E. J. Brill.
- . (2000-2001). 'El romandalusí reflejado por el glosario botánico de Abulxayr'. *EDNA* 5: 93-241.
- . (1998). 'Arabismos dialectales del Iberromance central'. *EDNA* 3: 65-124.
- . (1997). *A Dictionary of Andalusī Arabic*. Leiden-New York-Köln: E. J. Brill.
- . (1997). *Poesía Dialectal Árabe y Romance en al-Andalus*. Madrid: Gredos.
- . (1992). *Árabe Andalusi y Lenguas Romances*. Madrid: Mapfre.
- . (1992). 'Linguistic interference between Arabic and the Romance languages of the Iberian Peninsula'. In: Khadra Khayyusi, S. (ed.). *The Legacy of Muslim Spain*. Leiden: E. J. Brill. 443-456.
- . (1991³). *Diccionario Árabe-Español*. Barcelona: Herder.
- . (1977). *A Gramatical Sketch of the Spanish Arabic Dialect Bundle*. Madrid: Instituto Hispano Árabe de Cultura.
- Del Valle, Carlos. (2003). 'Sobre la lengua de los judíos en la España visigoda y al-Andalus'. *Sefarad* 63: 183-193.
- Dozy, Reinhart. (1877-1881). *Supplément aux dictionnaires arabes*. Leyden: E. J. Brill. 2 vols.
- Ferrando Frutos, Ignacio. (2000). 'Andalusī Arabic in the post-Islamic North of Spain: The Language of Aragon's Mudejars and Moriscos'. In: Mifsud, M. (ed.). *Proceedings of the Third International Conference of Aida*. Malta.
- . (1998). 'El árabe andalusí en Aragón: fuentes y vías de aproximación'. *EDNA* 3: 35-59.
- . (1995). *El dialecto andalusí de la marca media. Los documentos mozárabes toledanos de los siglos XI y XII*. Zaragoza: Universidad de Zaragoza.
- García Gómez, Emilio. (1970). *Hacia un refranero árabe-andaluz*. Madrid: CSIC.
- . (1944). 'Don Miguel Asín (1873-1944). Esquema de una biografía'. *Al-Andalus* 9: 266-291.
- García Sánchez, Expiración. (2008). 'Utility and Aesthetics in the Gardens of al-Andalus: Species with Multiple Uses'. In: Dendle, P. & Touwaide, A. (eds.). *Health and Healing from the Medieval Garden*. Woodbridge: The Boydell Press. 205-227.

- . (2007). 'Ornamental Plants in Agricultural and Botanical Treatises from Al-Andalus'. In: Conan, M. (ed.). *Middle East Garden Traditions: Unity and Diversity*. Dumbarton Oaks: Harvard University Press. 75-93.
- . (2002). 'Dietic Aspects of Food in al-Andalus'. In: Waines, D. (ed.). *Patterns of Everyday Life*. Aldershot (UK): Ashgate Variorum. 275-288.
- . (1997). 'Estado actual y perspectivas de los estudios sobre agronomía andalusí'. In: *I Encuentro Internacional sobre El Legado Científico en Occidente Islámico*. Muhammadiyya: 101-118.
- . (1997). 'Tradición e innovación en los textos agrícolas y botánicos andalusíes del siglo XII'. In: *Renovación Intelectual del Occidente Europeo (s. XII)*. Estella: 24 Semana de Estudios Medievales. 275-313.
- . (1994). 'El botánico anónimo sevillano y su relación con la escuela agronómica andalusí'. In: García Sánchez, E. (ed.). *Ciencias de la Naturaleza en al-Andalus. Textos y Estudios*. Granada: CSIC. Vol. 3. 193-210.
- . (1992). 'Agriculture in Muslim Spain'. In: Khayyusi, S. K. (ed.). *The Legacy of Muslim Spain*. Leiden: E. J. Brill. 987-999.
- Haywood, John A. (1965). *Arabic Lexicography*. Leiden: E. J. Brill.
- Ibn al-'Awwām. (1988). *Kitāb al-filāḥa. Libro de Agricultura*. Ed. by E. García Sánchez and J. E. Hernández Bermejo. Madrid: Ministerio de Agricultura.
- Ibn Baṣṣāl (1995). *Libro de Agricultura*. Edition with Spanish translation and notes by J.M. Millás Vallicrosa & M. 'Azīmān (Tetuán, 1955). Facsimile edition with preliminary study and indexes by E. García & J.E. Hernández Bermejo. Seville: Sierra Nevada.
- Ibn Ḥajjāj. (1982). *al-Muqni 'fī-l-filāḥa*. Edition by S. Jarrār and Y. Abū Šāfiya. 'Ammān: Majma' al-lughat al-'arabiyya al-urduniyya.
- Ibn Luyūn. (1988). *Kitāb ibdā' al-malāḥa wa-inhā' al-rajāḥa fī uṣūl šinā'at al-filāḥa. Principio de la belleza y fin de la sabiduría sobre los fundamentos del Arte y la Agricultura*. Edition with Spanish translation by J. Eguaras Ibáñez. Granada: Patronato de la Alhambra.
- Ibn Wāfid, 'Abd al-Raḥmān b. Muḥammad. (1997). *Tratado de Agricultura: traducción castellana (Ms. s. XIV)*. Edition by Cipriano Cuadrado Romero. Málaga: Universidad de Málaga.
- Idrīsī, Muḥammad b. Muḥammad al-Sharīf al-. (1995). *Kitāb al-jāmi' li-ṣifāt ashtāt al-nabāt wa-ḍurūb anwā' al-mufradāt (Compendium of the Properties of diverse Plants and various kinds of Simple Drugs)*. Ed. by Fuat Sezgin, Mazen Amawi, Eckhard Neubauer. Frankfurt am Main: Institute for the History of Arabic-Islamic Science. 3 vols.
- Johnstone, T. M. (1967). *Eastern Arabian Dialect Studies*. London: Oxford University Press.
- Kazimirski, A. de Biberstein. (1860). *Dictionnaire Arabe-Français*. Beyrouth: Librairie du Liban. 2 vols.
- Kennedy, Hugh. (2002). *An Historical Atlas of Islam*. Leiden: E. J. Brill.
- . (1997). *Muslim Spain and Portugal: A Political History of al-Andalus*. London-New York: Longman.
- Khadra Jayyusi, Salma (ed.). (2000). *The Legacy of Muslim Spain*. Leiden-Boston: E. J. Brill.
- Khaṭṭābī, M. 'A. (1990). *'Umdat al-ṭabīb fī ma'arifāt al-nabāt by Abul Khayr of Seville*. Rabat: Maṭbū'āt Akādīmiyya al-Mamlaka al-Maghribiyya.

- Lloyd, Paul M. (1987). *From Latin to Spanish*. Philadelphia: American Philosophical Society.
- López A. C. (1990). *Kitāb fī tartīb awqāt al-ghirāsa wa-l-maghrūsāt: un tratado agrícola andalusí anónimo*. Granada: CSIC.
- Meiseles, Gustav. (1978). *Reference Literature to Arabic Studies*. Tel-Aviv: University Publishing Projects.
- Menéndez Pidal, R. (1980). *Orígenes del español. Estado lingüístico de la Península Ibérica hasta el siglo XI*. Madrid.
- Montgomery Watt, W. & Cachia, P. (2008). *A History of Islamic Spain*. New Brunswick-London: Aldine Transaction Publishers.
- Navarro García, M. Ángeles. (1992). 'Un nuevo tratado agrícola andalusí'. In: García Sánchez, E. (ed.). *Ciencias de la Naturaleza en al-Andalus. Textos y estudios*. Granada: CSIC. Vol. 2. 155-169.
- Penny, Ralph J. (1991). *A History of the Spanish Language*. Cambridge: Cambridge University Press.
- Rabin, Chaim. (1951). *Ancient West-Arabian*. London: Taylor's Foreign Press.
- Remie Constable, Olivia. (1997). *Medieval Iberia: Readings from Christian, Muslim, and Jewish Sources*. Philadelphia: University of Pennsylvania Press.
- Roth, Norman. (1994). *Jews, Visigoths & Muslims in Medieval Spain*. Leiden: E. J. Brill.
- Simonet, F. J. (1888). *Glosario de voces ibéricas y Latinas usadas entre los mozárabes precedido de un estudio sobre el dialecto hispano-mozárabe*. Madrid.
- Steiger, A. (1991). *Contribución a la fonética del hispano-árabe y de los arabismos en el ibero-románico y el siciliano*. Madrid: CSIC.
- Ṭignarī, Muḥammad b. Mālik al-. (2006). *Kitāb zuhrat al-bustān wa-nuzhat al-aḡhān. Esplendor del jardín y recreo de las mentes*. Edition and notes by E. García Sánchez. Madrid: CSIC.
- Tilmatine, Mohand & Bustamante Costa, Joaquín. (2000-2001). 'La fitonimia amazige en la 'Umdat al-ṭabīb'. *AM* 8-9: 413-462.
- Versteegh, Kees. (2003). *The Arabic Language*. Edinburgh: Edinburgh University Press.
- Vicente, A. (2003). 'Fuentes para el estudio de los dialectos árabes'. *EDNA* 7: 173-195.
- Wehr, Hans. (1994⁴). *A Dictionary of Modern Written Arabic (Arabic-English)*. Ed. by J. Milton Cowan. Urbana, IL: Spoken Language Services, Inc.
- 石原 忠佳 (2005) 「アル・アンダルスのアラビア語：品詞論的立場から (4) 派生形動詞パラダイムの比較」 『外国語学科紀要』、15、109-129。
- 清水 宏祐 (2007) 『イスラム農書の世界』 山川出版社。
- 高階 美行 (2001) 「アラビア文字」 三省堂『言語学大辞典』別巻『世界文字辞典』、東京：三省堂書店、42-59。
- Encyclopaedia of Islam*. (1960-2005). Edited by P.J. Bearman, Th. Bianquis, C.E. Bosworth, E. van Donzel and W.P. Heinrichs. Leiden: E. J. Brill. 2nd Edition. 12 vols.