

Revue des mondes musulmans et de la Méditerranée

126 | 2009

Le monde rural dans l'Occident musulman médiéval

Studies on the agronomy of Al-Andalus



EXPIRACIÓN GARCÍA ET JULIA MARÍA CARABAZA

<https://doi.org/10.4000/remmm.6465>

Résumés

Français English

Comme il peut être déduit du titre donné à ce travail, le principal objectif que nous nous sommes fixés, c'est de procéder à une mise à jour de la recherche en ce qui concerne les œuvres agricoles écrites à Al-Andalus. Pour ce faire, nous analyserons dans un premier temps, les manuscrits que l'on connaît de ces œuvres en question et qui appartiennent aussi bien aux bibliothèques du monde arabe qu'à des bibliothèques occidentales. Ensuite, nous mentionnerons les traités agronomiques qui sont actuellement édités et traduits, accompagnés de quelques notes critiques concernant les travaux qui ont été mis en œuvre jusqu'à présent dans ce domaine, pour terminer avec l'exposé des différents projets qui sont actuellement en cours et qui sont relatifs à ces traités agricoles d'Al-Andalus.

As the title of this paper implies, our main objective as authors is to bring up to date the research regarding the written work on agriculture in al-Andalus. In order to do this, in the first place we shall analyze the existing manuscripts which belong to both Arab and Western libraries. Then we shall point out the agronomic treatises which have been edited and translated, with some critical observations on the works which have been carried out in this field up until the present time, and we shall finish with an explanation of the different projects in progress that are related to these Andalusí agricultural treatises.

Entrées d'index

Mots-clés : agronomie, Al-Andalus, éditions, manuscrits, traductions, projets.

Keywords: agronomy, Al-Andalus, Editions, Manuscripts, Translations, Projects.



Texte intégral

1 As the title of this paper implies, our main objective as authors is to bring up to date the research regarding the written work on agriculture in al-Andalus. In order to do this, in the first place we shall analyze the existing manuscripts which belong to both Arab and Western libraries. Then we shall point out the agronomic treatises which have been edited and translated, with some critical observations on the works which have been carried out in this field up until the present time, and we shall finish with an explanation of the different projects in progress that are related to these Andalusî agricultural treatises.

2 Before going on to the different sections of this paper, we would like to make it quite clear that we shall be referring exclusively to the Hispano-Arabic agronomists whose work we have had access to, whether it may be complete or partial. Therefore, authors of whom we have some vague reference but whose work is not known to us will not be mentioned in these pages. Likewise we would like to point out that our work is based on the bibliography in the Escuela de Estudios Árabes (Consejo Superior de Investigaciones Científicas) which consists of almost four hundred books. All of them have been thoroughly checked through for this study, and we would mention that in the small amount of catalogues from American libraries which have been available to us, we have found no reference to the manuscripts regarding the subject we are dealing with.

3 On mentioning each of the Andalusî agronomists we will follow a chronological order, and with regard to the manuscripts which are either theirs or attributed to them, there will be the following arrangement: 1) codices which exist in the libraries of Arab countries, 2) manuscripts from the libraries of European countries. In both cases we follow the alphabetical order of the names of the cities where the libraries are located.



Manuscripts

4 In the first place, we would point out that in our search hardly any manuscripts were found that had not already been included in previous studies, therefore we shall make reference to those which are mentioned here for the first time. Secondly, we must take into account the fact that the majority of the registered codices are miscellaneous so we shall indicate the exact pages of each of the agricultural manuscripts treatise under consideration.

5 ANONYMOUS ANDALUSÎ. There are no known biographical details about this author, although from the references implied from his work titled *Kitâb fî Tartîb awqât al-ghirâsa wa-l-maghrûsât*, we can deduce that he lived at the end of the 10th Century and beginning of 11th, which means that he is the first of the Andalusî agronomists (*Kitâb fî Tartîb*, 1990: 17-19).

6 Although with certain reservations, we have identified him as Ibn Abî l-Jawâd, mentioned by some later agronomists as the author of a *Risâla fî l-filâha*, of which there are no known manuscripts¹. There are two copies of the treatise of this Anonymous Andalusî:

7 - Bibliothèque Nationale, Tunis, n^o 13812, folios 1r – 30r².

8 - Bibliothèque Nationale, Paris, n^o 4764, folios 47r – 64r (Vajda, 1953: 342).

9 IBN WÂFID, Abû l-Muṭarrif ‘Abd al-Raḥmân b. Muḥammad b. ‘Abd al-Kabîr b. Yaḥyâ b. Wâfid b. Muḥannad al-Lajmî, an agronomist and physician from Toledo, who died in 1074-5. There is no existing Arab manuscript with the name of this agronomist as the author of this study; there is only a Castilian codex, number 10106 in the Toledo Cathedral Library, which attributes it to a certain «Abel Mutariph Abel Nufit», who according to J. M. Millás Vallicrosa must be identified with Abû l-Muṭarrif Ibn Wâfid (Millás, 1943: 284-293). Although this name is not to be found in any Arabic manuscript, we have two references which claim that this author from Toledo wrote a treatise on agriculture: the first is by the historian Ibn al-Abbâr, who in *Takmila* leaves it quite clear that Ibn Wâfid wrote *Majmû‘ fî l-filâha* (*Summary or Compendium of Agriculture*), since he was an expert in agronomy and had been in charge of the



planting of the orchard of al-Ma'mûn b. Dhî l-Nûn in Toledo (Ibn al-Abbâr, 1886-1889: VI, 551). The second reference is also from an agronomist, Ibn Luyûn, who in the margin of his agricultural poem claims that Ibn Wâfid wrote *Majmû', fî l-filâha*³.

10 The Arab text which corresponds to the Castilian translation published by Millás, and therefore the work of Ibn Wâfid, can be found in numerous manuscripts, but there are conflicting opinions regarding the authorship of the manuscripts. This is not the appropriate moment to deal in depth with the different opinions which have been considered or how we have reached the conclusion that in fact we have opted for *Majmû', fî l-filâha* by Ibn Wâfid⁴, so we shall present the sources we believe to be included in his study, adding the different references included, and those which have been dealt with afterwards.

11 - Bibliothèque Nationale, Algiers, n° 1550, folios 154v-180r (Fagnan, 1983: 426-427), in the name of Abû l-Qâsim b. 'Abbâs al-Nahrâwî (*explicit* on folio 180r), later identified with al-Zahrâwî (Abulcasis latino) from Córdoba.

12 - Bibliothèque Générale, Rabat, n° 617 j, pp 414-478⁵, in the name of Ibn Ḥajjâj (p 414), whose authorship was later defended by the Jordanian publishers of the agronomic document called *al-Muqni', fî l-filâha*.

13 - Bibliothèque Générale, Rabat, n° 1410 D, folios 157r-194r (Allouche & Regragui, 1958: II, 274), in the name of Ibn Ḥajjâj (folio 216r).

14 - Bibliothèque Royale, Rabat, n° 69, pp 1-74 (al-Khattâbî, 1982: 233), without any reference in the text, but quoting the name Ibn Ḥajjâj in the catalogue (the author followed by the previously-mentioned Jordanian publishers).

15 - Bibliothèque Royale, Rabat, n° 6342, pp 2-40 (al-Khattâbî, 1982: 232-233), without any reference in the text, but in the name of Ibn Ḥajjâj in the catalogue.

16 - Private manuscript of M. 'Azîmân, Tetuan, folios 106v-130v (Millás, 1954b: 87-96), with no reference in the text. In the opinion of B. Attié (1982: 321), these folios are the work of al-Nahrâwî.

17 - Bibliothèque Générale, Tetuan, n° 889/13, pp 1-51 (*Catálogo*, 1973: 81), included in the catalogue as unknown author, inside the manuscript to Ibn Ḥajjâj.

18 - Bibliothèque Nationale, Tunis, n° 13812, folios 30v-44v (*Kitâb fî Tartîb*, 1990: 43-44), a codex containing only some fragments of the work of Ibn Wâfid and with no mention of the author on these pages.

19 - Bibliothèque Nationale, Paris, n° 5013, folios 1v-47r (Vajda, 1953: 342). The name of Ibn Ḥajjâj appears on folio 71r, therefore in the catalogue the whole study is under the name of this agronomist (in spite of the fact that on folios 72r to 161v we find the manuscript of Ibn Baṣṣâl) which is maintained by the Jordanian publishers of *al-Muqni'*.

20 - Bibliothèque Nationale, Paris, n° 5754, folios 152v-176v (Vajda, 1953: 342), in the name of Abû l-Qâsim b. 'Abbâs al-Nahrâwî (as we have already mentioned, he is identified as the physician from Córdoba, al-Zahrâwî) in two *explicit* in the text (folios 176v and 186r). Similarly we can find the title of the work: *Kitâb al-Filâha*. Although folios 176v to 186r are attributed to al-Nahrâwî, this is a summary, or extracts from the same, of the agronomic document by Ibn al-'Awwâm (Attié, 1969: 261).

21 - Bibliothèque Nationale, Paris, n° 4764, folios 151v-160v, in the catalogue in the name of Abû l-Khayr, as this author appears on folio 64r. Nevertheless, there are several different works in this codex, and in the previously-mentioned folios we can find part of the work of Ibn Wâfid on reared poultry and recommendations against different blights in crops. As happens in previous occasions, these folios are attributed to al-Nahrâwî by Professor Bachir Attié, and to Ibn Ḥajjâj by the Jordanian publishers of *al-Muqni'*⁶.

22 Apart from the translation in Medieval Castilian referred to, there is another one in Medieval Catalan of *Majmû', fî l-filâha* by Ibn Wâfid on folios 62r to 111r of manuscript n° 93 of the collection of Spanish and Portuguese codices in the National Library in Paris (Morel, 1892: 32-33). The existence of this Catalan version meant that we finally opted for attributing the work it contained to Ibn Wâfid. Although we are dealing with an incomplete manuscript without the name of any specific author, it is well known that



this agronomist and physician from Toledo was held in high esteem by the translators of the Crown of Aragon. His translation of *Kitâb al-Adwiya al-mufrada (Treatise of simple medicines)* (Ibn Wâfid, 1943) is proof of this; it was also translated into several Latin versions.

23 IBN HAJJÂJ, Abû ‘Umar Aḥmad b. Muḥammad was an agronomist from Sevilla who died at the end of the 11th Century (Carabaza, 1992: 39-55). As we have discovered, there are various manuscripts under the name of Ibn Ḥajjâj although in fact they also contain other works (among them those of Ibn Wâfid). So we shall only list the folios or pages on which we consider that the treatise by this author, *al-Muqni’, fî l-filâḥa*, is included; to date, there has been no controversy about its author.

24 - Bibliothèque Générale, Rabat, n° 617 j, pp 478-510.

25 - Bibliothèque Générale, Rabat, n° 1410 D, folios 194r-216r.

26 - Bibliothèque Royale, Rabat, n° 69, pp 74-103.

27 - Bibliothèque Royale, Rabat, n° 6342, pp 40-58.

28 - Bibliothèque Générale, Tetuan, n° 889/13, pp 51-77.

29 - Bibliothèque Nationale, Paris, n° 5013, folios 47r-71r⁷.

30 IBN BAŞŞÂL, Abû ‘Abd Allâh Muḥammad b. Ibrâhîm al-Ṭulayṭulî, an agronomist born in Toledo, as indicated by his *nisba*, in the middle of the 11th Century, about whom we have few biographical details. His name is often distorted both by those who copied and transcribed in European countries in Ibn Faşşâl, Ibn Faḍḍâl and Ibn Baṭṭâl, although the correct name is Ibn Başşâl. His most well-known agronomic work, *Kitâb al-Filâḥa*, was dedicated to al-Ma’mûn from Toledo, and soon after it was summarized under the title of *Kitâb al-Qaşd wa-l-bayân*. Prior to the transfer of the Toledo Taifa to Christian hands, Ibn Başşâl left for Sevilla, where he died at the beginning of the 12th Century.

31 His agronomic treatise is registered in the following manuscripts:

32 - Bibliothèque Générale, Rabat, n° 1410 D, folios 1v-98r.

33 - Bibliothèque Générale, Rabat, n° 617 j, pp 270-413⁸.

34 - Bibliothèque Royale, Rabat, n° 6332.

35 - Bibliothèque Royale, Rabat n° 6519 (al-Khaṭṭâbî, 1982: 231-232).

36 - Private manuscript belonging to M. ‘Azîmân, Tetuan, folios 49v-105v⁹.

37 - Biblioteca de El Escorial (Collection of Ancient Books), Madrid, nos. 45, 47 and 428.

These manuscripts correspond to the original Arabic collection of the library of El Escorial monastery in Madrid. They must have been destroyed in a fire which affected the upper store of the monastery in 1671. Only the first two manuscripts are attributed to the agronomist from Toledo; the third one, quoted among the «Libros de medicina sin autor» («medical books with no author») is said to be an «Imperfect agricultural book in 16 chapters», therefore we imagine that it is an incomplete copy of *Kitâb al-Qaşd wa-l-bayân* (Morata, 1934:108, 148,179; Ibn Başşâl, 1995: XXVI).

38 - Bibliothèque Nationale, Paris, n° 5013, folios 72r-161v.

39 - Bibliothèque Nationale, Paris, n° 4764, folio 161v (Carabaza *et al.*, 1991: II, 1120, 1123).

40 Another agronomic publication attributed to Ibn Başşâl is the *Taqyîd min dîwân al-filâḥa li-Ibn Faḍḍâl*, a short treatise on planting, sowing and grafting of some trees and plants¹⁰ is included in the following miscellaneous codex:

41 - Biblioteca de la Real Academia de la Historia, Madrid, n° XXX of the «Colección Gayangos», folios 100v-141r (E. Terés, 1975: 24).

42 Finally, there is a third treatise *Taqyîd âjar min ghayr kitâb Ibn Faḍḍâl*; due to the ambiguity of the syntax of its title, it is not certain whether it was written by the agronomist from Toledo. There is another copy of it in the previous miscellaneous source:

43 - Biblioteca de la Real Academia de la Historia, Madrid, n° XXX of the «Colección Gayangos», folios 141v-143v¹¹.

44 In our opinion, these two treatises may correspond to the missing manuscripts from El Escorial, the aforementioned nos. 45 and 47, respectively.



45 The manuscript of Ibn Baṣṣāl was translated into Castilian in the 13th Century, the
same as that of the other writer from Toledo, Ibn Wâfid. Although this medieval version
has only the first twelve chapters, at times it is more complete than the Arab
manuscripts, and therefore we have been able to complete some information missing
from the Arabic (Millás, 1948: 347-430).

46 ABÛ L-KHAYR, the Sevillian agronomist and botanist, known as *al-Shajjâr*, who
died at the end of the 11th Century – beginning of the 12th Century. The following
manuscripts are related to this author: n° 13812 of the National Library in Tunis, 2809
of the National Library of Paris and 19 of the Library of the Royal Academy of History
in Madrid, although the sources which really have his *Kitâb al-Filâḥa* are the following
(none of them in its complete form)¹²:

47 - Bibliothèque Générale, Rabat, n° 1410 D, folios 130v-133v.

48 - Private manuscript belonging to M. ‘Azîmân, folios 23v-48v¹³.

49 - Bibliothèque Nationale, Paris, n° 4764, folios 64r-151v, the only source which bears
the name of the author, Abû l-Khayr al-Shajjâr al-Ishbîlî, and the title of his treatise,
Kitâb al-Filâḥa (folio 64r).

50 AL-ṬIGHNARÎ, Abû ‘Abd Allâh Muḥammad b. Mâlik al-Murrî al-Hâjj al-Gharnâṭî, a
writer who was born in a small village near Granada at the time of the last Zirîs and
died in the 12th Century, although we do not know the exact date. He dedicated his
agronomic treatise, *Kitâb Zuhrat al-bustân wa-nuzhat al-adhhân*, to the Almoravid
governor of Granada Abû l-Ṭâhir Tamîm b. Yûsuf b. Tashufîn (García, 1988: 1-12).
There is only one copy of the original text of this article, which originally had twelve
maqâlât and three hundred and sixty *abwâb*, as stated in the notes in the margin of the
work by Ibn Luyûn. There are a large number of summaries of it, but all of them are
incomplete. The original text is:

51 - Bibliothèque Nationale, Algiers, n° 2163. This copy of the original only preserves
somewhat less than the complete text, as it includes from the *maqâla* IV, from the end
of *bâb* 36, to *bâb* 49 of the *maqâla* IX (García, 1987-1988: 282).

52 Summaries:

53 - Bibliothèque Nationale, Algiers, n° 2162, although it is registered as anonymous
(Carabaza *et al.*, 1991: II, 1132).

54 - Faculté des Lettres et des Sciences Humaines, Rabat, n° 239¹⁴.

55 - Bibliothèque Générale, Rabat, n° 39 D. This copy of the summary, as others which
we shall indicate, is attributed to Ibn Ḥamdûn al-Ishbîlî, and therefore it cannot be al-
Ṭighnarî, as some have claimed. Maybe this is the author of the summary, although we
cannot provide any biographical data on him, other than the fact that he did not live
prior to the 14th Century (García, 1987-88: 284-285).

56 - Bibliothèque Générale, Rabat, n° 344 D¹⁵.

57 - Bibliothèque Générale, Rabat, n° 1260 D¹⁶.

58 - Bibliothèque Générale, Rabat, n° 1579 D (Allouche & Regragui, 1958 : II, 274).

59 - Bibliothèque Générale, Rabat, n° 1410 D, folios 105v-130v.

60 - Bibliothèque Générale, Rabat, n° 617 j, pp 1-269.

61 - Bibliothèque Générale, Rabat, n° 1674 K¹⁷.

62 - Bibliothèque Royale, Rabat, n° 1534, folios 1r-109v (al-Khaṭṭâbî, 1982: 227).

63 - Bibliothèque Générale, Tetuan, n° 545.

64 - Bibliothèque Générale, Tetuan, n° 584.

65 - Bibliothèque Générale, Tetuan, n° 613 (*Catálogo*, 1973 : 81).

66 - Manuscript belonging to the

67 to M. ‘Azîmân, Tetuan. The passages occupy the first 49 folios and are attributed to
Ḥamdûn al-Ishbîlî (Millás, 1954a:131-134).

68 - Archivo Municipal, Córdoba, n° IV («Colección», 1959-1960: 108).

69 - Biblioteca de El Escorial (Collection of Ancient Books), Madrid, n° 11, catalogued as
«Aben Malich de Taaza» (Ibn Mâlik al-Ṭa‘azî). Volume 1 of the Book of Agriculture,
comprising four first books of the twelve written¹⁸.

- Bibliothèque Nationale, Paris, n° 7023.



71 - Bibliothèque Nationale, Paris, n° 7069 (Sauvan *et al.*, 1987: 17). We have seen that the first of these two copies from Paris is in a deteriorated condition, in fact almost illegible, and is attributed to Ḥamdûn al-Ishbîlî. The second one, ms. n° 7069, claims in a recent note that «malgré l'indication de Colin «Tighnari» sur la couverture, le texte pourrait être l'anonyme *Umdat al-ṭabîb* », which is a totally erroneous claim (Carabaza *et al.*, 1991: II, 1123).

72 IBN AL-'AWWÂM, Abû Zakariyâ Yahyâ b. Muḥammad b. Aḥmad, a Sevillian agronomist from the end of the 12th Century – beginning of 13th Century. The encyclopaedic works of this agronomist, or summaries of them, of various passages from them, are included in several manuscripts (Ibn al-'Awwâm, 1988: 39-40):

73 - Bibliothèque Nationale, Algiers, n° 1550, folios 180r-193v, in part of the summary of his *Kitâb al-Filâḥa*.

74 - Bibliothèque Générale, Rabat, n° 1410 D, folios 140r-154v¹⁹, which only includes different extracts.

75 - Manuscript belonging to M. 'Azîmân, Tetuan, folios 39v-48v (García, 1987: 340; Millás, 1954a:127-140).

76 - Deutsche Staatsbibliothek, Berlin, n° 6206, giving the whole work, except for the section on zootechny.

77 - University of Cambridge Library, Cambridge, n° 1027 (Cod. Or. 608-8) (Brockelmann, 1937-1942: S I, 903), giving a summary of the work.

78 - Leyde University Library, n° 1285 (Cod. Or. 346 Warn) (Brockelmann, 1937-1942: I, 651-652; Ullmann, 1972: 447-448; Voorhoeve, 1957: 83), which only has the first part (volume 1 of Banqueri's translation) of *Kitâb al-Filâḥa*.

79 - British Museum Library, London, n° 998 (Add. 01461) (Brockelmann, 1937-1942: I, 651-652; Ullmann, 1972: 447-448). A copy of the ancient manuscript from El Escorial, which is up until now the most complete work.

80 - Biblioteca de la Real Academia de la Historia, Madrid, n° IX of the «Colección Gayangos» (Terés, 1975: 24) from the Escorial collection and the most complete known collection up to the present.

81 - Biblioteca Nacional, Madrid, nos. XCIC, CI-3 and CXII-XIII (Ullmann, 1972: 447-448), copy of the previous codex.

82 - Bibliothèque Nationale, Paris, n° 2804 (Vajda, 1953: 342), perhaps the oldest and most correct one, but missing the whole of the second part and some of the first part.

83 - Bibliothèque Nationale, Paris, n° 5754, folios 176v-186r which only give a summary, or extracts of it, from the work of Ibn al-'Awwâm²⁰.

84 IBN LUYÛN, Abû Uthmân Sa'd b. Aḥmad b. Ibrâhîm b. Aḥmad al-Tujîbî, an author who lived and died (1349) in Almería. He was an outstanding lawyer and wrote a work on an agricultural theme, *Kitâb Ibdâ' al-malâḥa wa-inhâ' al-rajâḥa fî uṣûl sinâ'at al-flâḥa*, also known as *Ujrûza fî l-flâḥa*, since he wrote it in *rajaz* verse. The following manuscripts are preserved:

85 - Bibliothèque Nationale, Nuakchot, n° 65 (Rebstock *et al.*, 1988: 94-95). It is attributed to the name of Abû Uthmân b. Abî Ja'far b. Laiyûn (*sic*) al-Tujîbî.

86 - Bibliothèque Générale, Rabat, n° 39 (M. al-Manûnî) (Şâliḥiyya, 1984: 566).

87 - Bibliothèque Royale, Rabat, n° 11872²¹.

88 - Faculté des Lettres et des Sciences Humaines, Rabat, n° 26 (Şâliḥiyya, 1984: 566).

89 - Biblioteca de la Escuela de Estudios Árabes (C.S.I.C.), Granada, n° XIV (Castillo, 1984: 230-231).

90 On revising the catalogue of manuscripts we have found some anonymous codices. In order to check whether these are Andalusî works, we have requested them from the corresponding libraries. While we can verify their origin, we can only offer the following information:

91 - Dâr al-Kutub al-Waṭaniyya, Tunis, n° 454. The title is *Mukhtaṣar al-filâḥa* ('Umar, 1986:179).

92 - Bibliothèque M. le Comte Rochaid, Paris, n° 124 (Bîṭâr, 1987: I, 272).

93 - Biblioteca Ambrosiana, Milan, n° CCLXXIII (Löfgren & Traini, 1975-1981: I, 144).



Editions and translations

94 On analyzing the agronomic Andalusî texts published, the first question which arises is that a considerable number of them came to light quite a few years ago, and some of them, as in the case of Ibn al-‘Awwâm, almost two centuries ago, which meant having new editions, for various reasons. On the one hand, new copies of the manuscripts have been made, which obviously enrich and improve the original texts. On the other hand, over recent years new sources and studies on the subject have been published which help research work on the varied material comprising these texts. Finally, since some years ago multidisciplinary teamwork has begun, which is essential to carry out this study.

95 Three of these works, Ibn Baṣṣâl, Ibn al-‘Awwâm and Ibn Luyûn, have been re-edited, and the first two accompanied by preliminary studies which check them and bring up to date the bio-bibliographical news on the author and his work, as well as re-interpreting their botanical and agricultural contents. In spite of the obvious need to make a new edition and translation of these works, the lack of time meant making a new edition only, owing to the first ones being out of print and to the increased interest in the subject. We shall, therefore, examine the editions and translations available up until now²².

96 ANONYMOUS ANDALUSÎ. We do not consider that this complies with any of the circumstances which would lead to a new publication, i.e. appearance of new manuscript copies or their age, apart from the fact that the edition and translation (*Kitâb fî Tartîb*, 1990) are correct. The only possibility would be to review some of the botanical identification, which might lead to new interpretation.

97 IBN WÂFID and IBN ḤAJJÂJ. We shall refer to these two agronomists at the same time, because we can see from previous pages that their manuscripts appear together in several manuscripts, which has meant a diversity of opinions regarding their author.

98 As mentioned previously, there is an edition of the manuscripts of both agronomists published in ‘Ammân in 1982. Their editors, Ş Jarrâr and J. Abû Şafiyya, maintain that the whole text of the edition, entitled *al-Muqni‘, fî l-filâḥa*, corresponds to Ibn Ḥajjâj. In fact the three manuscripts which both editors refer to are in the name of this Sevillian agronomist; n° 617 j from the General Library of Rabat, n° 69 from the Royal Library of Rabat and n° 5013 from the National Library of Paris, but, given the fact that all these codices are of a miscellaneous type, how can the author be decided on just from certain pages on which this agronomist is mentioned? Evidently, if this procedure had been followed in all the cases, the work of different Andalusî agronomists would never have been detected. On the other hand, these Jordanian editors do not consider the fact that in other sources, part of the text which is the subject of their work appears under another author, as in the case of al-Nahrâwî (manuscripts 1550 from the National Library of Algiers and 5754 of the Paris National Library). In spite of everything, both editors put forward a series of arguments (which in our opinion are weak) to support their stance. In later years (Carabaza, 1988: I, 114-175; Carabaza, 1990: 71-81) we have refuted these arguments with what we believe to be well-founded data, to show that pages 5–84 of the edition were part of a separate document, and that the remaining pages 85-124 contained the *excerpta* which have been preserved from Ibn Ḥajjâj.

99 Apart from the data already explained on this subject (differences in content, in agronomic sources...), we must bear in mind the greater number of codices included in the work by Ibn Wâfid in comparison with that of Ibn Ḥajjâj, which influences the independence of one manuscript with regard to the other. Similarly, the medieval translations of the first of the manuscripts in the edition of *al-Muqni‘*, confirm our opinion, because if it was a question of just one agricultural manuscript, why should one use, on two occasions, only one specific part of the work?



The *Majmû‘*, of Ibn Wâfid aroused greater interest among the Castilian (Millás Vallicrosa, 1948) and Catalan medieval translators (Ibn Wâfid, 1943), and many



centuries later and further a field – in Tunisia - it continued to be of interest. We mention this because the *shayj* ‘Alî al-Shannûfi (a wise man from the al-Zaytûna Mosque), based on a manuscript whose description he does not reveal, has re-edited the work of Ibn Wâfid, that is, the first part of the Jordanian edition wrongly attributed to Ibn Hâjjâj. This edition, with the title of *Kitâb Mukhtaṣar al-filâḥa al-ifrîqiyya* and *Kitâb Mukhtaṣar al-filâḥa ‘alâ l-kamâl wa-l-tamâm*, is a curious example of how the work of Ibn Wâfid has been summarized and adapted to the public it was meant for (Carabaza, 1994 & 1995: I, 309-318 & II, 209-229), and it is further proof of the independence of this treatise with respect to the Sevillian agronomist.

101 What is still somewhat inexplicable is that the author’s name should have been lost relatively soon; in fact, Ibn al-‘Awwâm does not even name Ibn Wâfid when he takes extracts from his work. So later copies from the 18th Century (such as the manuscripts of 1550 and 5754 already mentioned) and the edition from Tunisia, do not quote him, but offer other authors. In the case of the former two, if we accept that al-Nahrâwî is an alteration of al-Zahrâwî, the false author could be explained by the relationship that was established between the physician from Córdoba and the physician and agronomist from Toledo since the time of Ibn al-Abbâr (Ibn al-Abbâr, 1886-1889: VI, 551). As regards the authorship of the edition from Tunisia (Abû ‘Abd Allâh Muḥammad Ibn al-Ṣawwâm al-Andalusî), we must bear in mind that this is a summary of previous summaries, making the processing chain much more complex, and therefore more liable to all type of alterations (the name is a mixture of *kunya* and *ism* in Ibn Baṣṣâl and al-Ṭighnarî and the *nasab* altered from Ibn al-‘Awwâm).

102 As a result of everything mentioned, it is essential to set up some new editions separating the two treatises, and to use more sources to check the text with greater precision. This will lead to an improvement in the present translation which has several errors, since it was based on the Jordan edition.

103 IBN BAṢṢÂL. The edition and translation into Castilian of the work by Ibn Baṣṣâl, published in Tetuan in 1955 by J. M. Millás Vallicrosa and M. ‘Azîmân, meant reinitiating the study into the agronomy of al-Andalus which had been interrupted after the enormous effort made by Banqueri when he published the work by Ibn al-‘Awwâm at the beginning of the 19th Century.

104 Millás regrets not having had more than one manuscript available for the edition, which meant there were some doubts and difficulties which can, logically, be noticed in the edited text. Nevertheless, the sound philological training of this illustrious Arabist is evident from the text, although his knowledge of botany is not so sound. Some of his erroneous botanical interpretations have been rectified in the introductory study of the re-edition published a few years ago.

105 Since the publication of this work, a total of five new manuscript copies have been discovered, all of the summary and some of them incomplete and late, therefore they do not contribute anything new with regard to the ‘Azîmân miscellany. One of the manuscripts, n° 6519 in the Royal Library in Rabat, in Chapter V on the planting of trees, adds a sectionne of the

106 «on how to care for melissa when it is diseased and its leaves turn yellow»; this is only found in the medieval Castilian translation²³, although this is a scant contribution. Anyway, in the absence of a better manuscript of the original text, we believe that a new critical edition which can incorporate these new copies is essential. We do not know to what extent it would be feasible to achieve another proposal, that is, to reconstruct the text based on quotations on it from later authors.

107 ABÛ L-KHAYR. The edition we have of *Kitâb al-Filâḥa* by this Sevillian agronomist came to light a few years ago, in 1991, as mentioned in a previous note. Since no new manuscript of this work has appeared, it can be considered a definitive edition (with the exception of minor errors in reading which can easily be rectified). Certainly, he did not have the private manuscript of M. ‘Azîmân in front of him at the time of writing, but given its concomitance with an edition published in Fez, as pointed out by Millás Vallicrosa (1954a: 138), we do not believe that there are important differences between this and the 1991 edition. On the other hand, this edition includes in a final appendix



what was stated in the Fez edition. Regarding the latter, attributed in its totality to Abû l-Khayr (ed. S. Tuhâmî, 1358 H.), we would mention that some time ago it was shown to be a miscellaneous work in which, together with other agricultural treatises, the work of Abû l-Khayr extends from pages 144 to 174, together with two previous pages, 83 and 84 (Abû l-Khayr, 1991: 27-28; Attié, 1982: 323; García, 1987: 337; García Gómez, 1945: 134-135).

108 The translation of *Kitâb al-Filâḥa* of Abû l-Khayr may also be considered to be definitive, with the exception of some errors based on incorrect reading. It would also be required to introduce certain changes in the botanical identification of plants which appear in this book, since thanks to the combined studies of Botanists and Arabists, known species of plants in al-Andalus, whose identification was obscure, have now been defined.

109 AL-ṬIGHNARÎ. *Kitâb Zuhrat al-bustân wa-nuzhat al-adhhân* was the only unedited Andalusî, but he has recently been edited (al-Ṭighnarî, 2006), and the translation into Castilian is in progress.

110 Apart from the fact that this manuscript is one which reflects most directly and specifically the reality of agriculture in al-Andalus, it also entails the greatest difficulties in its critical edition. We have only this copy, which covers a little more than half of the original text, which is to be found in ms. n° 2163 in the General Library of Algiers, as previously mentioned. However, there are nineteen copies of the summary of this text, apart from another missing one, therefore we have had to select the copies to be used in the edition. All of these copies have an introduction that cannot be the work of al-Ṭighnarî for a series of reasons set out in other documents; after the introduction begin the typical subjects that usually head all agricultural manuscripts. So we have edited this first part, which is missing in the original but which appears in all the copies, according to the latter. The most significant problem arises when the summary reaches the beginning of the original text, which from this stage becomes the basic manuscript and is logically much longer than the copies of the summary. We have therefore done two parallel editions, one in the actual body of the edition and the other in the notes to it. These difficulties, among others, account for the delay in the publication of the edition.

111 IBN AL-‘AWWÂM. As already explained, the work of this agronomist from Sevilla was the first of Andalusî agronomy to be published and translated. The brain behind it was José A. Banqueri, and his efforts were recompensed by two thick volumes of the work in 1802. In spite of the enormous difficulties this Franciscan monk (Ibn al-‘Awwâm, 1988: 40-43) had to overcome, among them not having more than the original and one copy of the Escorial manuscript as mentioned, his edition and translation of *Kitâb al-Filâḥa* by Ibn al-‘Awwâm were excellent if we take into consideration the conditions of time and place in which he accomplished them ²⁴.

112 The appearance of new manuscripts, the improvements in methods of editing, the greater present-day knowledge of Andalusî agricultural treatises, and the result of combined works between Botanists and Arabists undoubtedly enable us to establish the original Arabic text with greater precision, and consequently to improve the translations done in this vast task until now.

113 IBN LUYÛN. The work by Ibn Luyûn, *Kitâb Ibdâ’ al-malâḥa wa-inhâ’ al-rajâḥa fi uşûl şinâ’at al-filâḥa* was the theme of the doctoral thesis of Joaquina Eguaras in 1944, although it was not edited and translated into Spanish until 1975, and re-printed in 1988. This publication was based on manuscript n° XIV in the Escuela de Estudios Árabes, written in 1348, one year before its author’s death, which increased interest in it. Although it was not copied by Ibn Luyûn himself, it points out in the *explicit* that it was done by a contemporary copyist, which states its originality.

114 The edition could be improved on, since some of its readings are not completely correct. It also omits the useful and abundant marginal notes of the manuscript which contribute interesting philological explanations related to some of the terminology used in the text, as well as other biographical notes on some Andalusî agronomists. We know



that these notes were not included by J. Eguaras in her edition, maybe because they were in a rather deteriorated state and therefore difficult to read²⁵.

115 We consider that the translation should be thoroughly revised, especially in the field of the botanonomy, where some serious errors in interpretation can be observed, such as the identification of *ṣubbâr* with cactus or prickly pear (*Ficus indica* L., *Opuntia ficus indica* Mill), which are species originating from America, and therefore which cannot be included among the flora from al-Andalus, although this identification is now correct. On the contrary, in the text of Ibn Luyûn, *ṣubbâr* should be taken as a Mahgreb dialectal term referring to aloe (*Aloe vera* L.).

116 We now know of four more copies, and from these we have made a detailed comparison of manuscript n^o 11872 from the Royal Library of Rabat with that in the Escuela de Estudios Árabes, and we have been able to confirm that the first is very similar to the second. Unfortunately this copy from Rabat does not include the marginal notes from the original. In spite of this, however, we consider a new publication of the treatise by Ibn Luyûn is essential, since although a lack of originality is attributed to it, it nevertheless has points of interest, as is shown from the fact that it was used by later authors.

Projects



117 As we have already pointed out in the previous section, a revision of some editions and translations to date is essential, with a view to establishing the authors of the Andalusî agricultural works clearly, as well as the content of each of them. The relevant projects being carried out in this field are the following:

118 - A new edition of the Arab text of *Majmû‘, fî l-filâḥa* by Ibn Wâfid, based on a larger number of manuscripts than were used by the Jordanian editors (Ibn Ḥajjâj, 1982). This edition will include the Spanish translation and the Catalan version already mentioned, in order to compare the similarities and differences there are between these two texts written in the Middle Ages. Further to this more complete and carefully compared edition, a final translation will be decided on, and this will improve the existing one, thanks to the thorough comparison between the texts. Dr. Julia M. Carabaza is working on this new edition and translation that scheduled to be published in 2011.

119 - A new edition and translation of the *excerpta* which we have access to of the agricultural treatise called *al-Muqni‘, fî l-filâḥa* by Ibn Ḥajjâj. For this edition too, a larger number of manuscripts is being used than was drawn on by the Jordanian editors (Ibn Ḥajjâj, 1982), with the purpose of defining the corresponding text to this Sevillian agronomist as far as possible, and consequently presenting the most faithful translation of the original Arabic. Dr. Julia M. Carabaza is working on this new edition and translation that scheduled to be published in 2010.

120 At the beginning of this project we were tempted to «rewrite» the whole works of Ibn Ḥajjâj, based on the multiple passages on him offered by Ibn al-‘Awwâm. Although it may seem an attractive and feasible project, we abandoned the idea because it would have been a type of betrayal to the historical and cultural legacy. If only some extracts of his *al-Muqni‘*, are included in the various Arabic manuscripts, it is because these were the ones that in fact were of greatest interest to the public they were aimed at, and his remaining works practically fell into oblivion. Therefore we believe that we must resign ourselves to the numerous quotations stated by his great follower Ibn al-‘Awwâm, who in his eagerness to compile all of the previous agronomic information, «recovers» Ibn Ḥajjâj from the oblivion he was subjected to by the remaining Andalusî agricultural works.

121 - A re-edition and new translation of Ibn Baṣṣâl (Ibn Baṣṣâl, 1995), based on the new Arab sources which have appeared, incorporating the Medieval Castilian translation



(Millás Vallicrosa, 1948). Dr. Angel López is working on this new edition and translation that scheduled to be published in 2011.

122 - Translation of the treatise of al-Ṭighnarî (al-Ṭighnarî, 2006), which Dr. Expiración García is working on and that scheduled to be published in 2010.

123 - A new edition and translation of *Kitâb al-Filâḥa* by Ibn al-‘Awwâm (Ibn al-‘Awwâm, 1988). Although work on this edition is well under way, we must emphasize the need to establish the Andalusî texts prior to Ibn al-‘Awwâm correctly, for this to be a practically final edition, since this *Kitâb al-Filâḥa* includes a large part of the preceding agricultural information (not only of authors from al-Andalus but also from classical agronomy and eastern Arabic). Doctors C. Álvarez de Morales, J. M. Carabaza and E. García are working on this new edition and translation that scheduled to be published in 2012.

124 - Re-edition and new translation of the treatise of Ibn Luyûn. Victor Barraso is working on this new edition and translation that scheduled to be published in 2012.

125 Other studies which are being carried out and which are essential to establish the texts and corresponding translations of the Andalusî agricultural works are those related to the agronomical sources quoted by our Andalusî authors. In this sense, for example, we are glad to say that a Spanish translation of the Greek *Geoponica* of the 10th Century (*Geopónica*, 1998) has been published a few years ago. The fact that this work is finally available is of invaluable help to clarify certain passages of the Andalusî agricultural works, since it includes a great deal of information from the Greco-Latin classical world, at that time used by our agronomists.

126 Likewise, we must make further mention of the interdisciplinary work being carried out between Botanists, Agronomists and Arabists. Thanks to them, we are able to achieve a better identification of the plant species named by the Andalusî agronomists, so consequently our view of the Andalusî agricultural landscape is becoming clearer and more defined; therefore the translations in the agricultural-botanical field²⁶ done up until now are improving.

127 Finally, we must add the development of a project of Hispano-Arabic cooperation, up to the 18th Century, related to the impact of Andalusî agronomy on the other side of the Strait. Following these same lines of study of the influence of the Andalusî agricultural works, on this occasion within the Christian world, another project has just been finished. It is titled: «Transfer of agricultural and ethno botanic information between the Iberian Islamic and Christian cultures: 10th – 17th Centuries» in which it once more claims the close collaboration between Arabist, Agronomists and Botanists.

Bibliographie

ABÛ L-KHAYR, 1991, *Kitâb al-Filâḥa. Tratado de agricultura*, introd., ed., trad. e índices J. M. CARABAZA, Madrid, AECI-ICMA.

AL-KHAṬṬÂBÎ Muḥammad al-‘Arabî, 1982, *Fahâris al-khizâna al-malikiyya, II: al-ṭibb wa-l-ṣaydala wa-l-bayjara wa-l-ḥayawân wa-l-nabât*, Rabat, Maṭba‘at al-najâḥ al-jadîda.

ALLOUCHE I. S. & REGRAGUI A., 1958, *Catalogue des manuscrits arabes de Rabat (Bibliothèque Générale et Archives du Maroc), deuxième série (1921-1953)*, Rabat, Éd. Techniques Nord-Africaines.

AL-ṬIGHNARÎ Muḥammad b. Mâlik, 2006, *Kitâb Zuhrat al-bustân wa-nuzhat al-adhhân (Esplendor del jardín y recreo de las mentes)*, E. GARCÍA (ed.), Madrid, CSIC.

ATTÎÉ Bachir, 1969, « Les manuscrits agricoles arabes de la Bibliothèque Nationale de Paris », *Hesperis-Tamuda* X: 241-261.

— 1982, « L'ordre chronologique probable des sources directes d'Ibn al-‘Awwâm », *Al-Qanṭara* III : 299-332.

BÎṬÂR M., 1987, *Catalogue des manuscrits précieux et livres rares composant la bibliothèque de M. Le Comte Rochaid Dahdah*, Paris, 1912, in Fuat SEZGIN *Beiträge zur Erschließung der Arabischen Handschriften in Deutschen Bibliotheken*, Frankfurt am Main, Institut für Geschichte der Arabisch-Islamischen, 3 vols.

BROCKELMANN Carl, 1937-1942, *Geschichte der Arabische Litteratur*, Leyde, E. J. Brill.



CARABAZA Julia María, 1988, *Aḥmad b. Muḥammad b. Ḥajjāj al-Ishbīlī: al-Muqni', fī l-filāḥa. Introducción, estudio y traducción con glosario* (Doctoral thesis edited with micro-filing cards), Granada, Universidad, 2 vols.

— 1990, « La edición jordana de *al-Muqni'*, de Ibn Ḥajjāj. Problemas en torno a su autoría », *Al-Qanṭara* XI: 71-81.

— *et al.*, 1991, « Obras manuscritas de los geóponos andalusíes (siglos X-XII) », in Emilio MOLINA *et al.* (coords.), *Homenaje al Prof. Jacinto Bosch Vilá*, Granada, Universidad: II, 1115-1132.

— 1992, « La familia de los Banū Ḥajjāj (siglos II-VII/VIII-XIII) », in Manuela MARÍN & Jesús ZANÓN (eds.), *Estudios Onomástico-biográficos de al-Andalus V*, Madrid, CSIC: 39-56.

— 1994, 1995, « Un compendio tunecino de geonimia andalusí (I) & (II) », *Boletín de la Asociación Española de Orientalistas* XXX: 309-318 & XXXI: 219-229.

— 1994, « Una versión catalana de un tratado agrícola andalusí », in Expiración GARCÍA (ed.), *Ciencias de la Naturaleza en al-Andalus. Textos y Estudios III*, Granada, CSIC: 169-192.

— *et al.*, 2004, *Árboles y arbustos de al-Andalus*, Madrid, CSIC.

CASTILLO CASTILLO Concepción, 1984, « Manuscritos árabigos que se conservan en la Escuela de Estudios Árabes de Granada », *Cuadernos de Historia del Islam* XI: 213-238.

Catálogo de manuscritos de la Biblioteca General de Tetuán, 1973, s. l.

« Colección de códices árabes existentes en el Archivo Municipal de Córdoba », 1959-1960, *al-Mulk* I: 105-120.

EBN EL AWAM, 1878, *Libro de agricultura*, arreglo hecho en vista de la trad. castellana de D. José Banqueri por Claudio Boutelou, Sevilla-Madrid.

FAGNAN Edmont, 1893, *Catalogue des manuscrits arabes de la Bibliothèque Nationale d'Alger*, Paris.

GARCÍA GÓMEZ Emilio, 1945, « Sobre agricultura arábigoandaluza. Cuestiones bibliográficas », *Al-Andalus* X: 127-146.

— 1984, « Traducciones alfonsíes de agricultura árabe », *Boletín de la Real Academia de la Historia* CLXXXI, n. III: 387-397.

GARCÍA Expiración, 1987, « Problemática en torno a la autoría de algunas obras agronómicas andalusíes », in *Homenaje al Prof. Darío Cabanelas Rodríguez, o.f.m., con motivo de su LXX aniversario*, Granada, Universidad: II, 333-342.

— 1987-1988, « El tratado agrícola del granadino al-Ṭighnarī », *Quaderni di Studi Arabi* 5-6: 278-291.

— 1988, « Al-Ṭighnarī y su lugar de origen », *Al-Qanṭara* IX, n. 1: 1-12.

— 1999, « Botánica y Agronomía en Ṭulayṭula », in *Actas del Congreso Internacional Entre el Califato y la Taifa: Mil años del Cristo de la Luz*, Toledo, Asociación de Amigos del Toledo Islámico.

Geopónica o Extractos de Agricultura de Casiano Baso, 1998, trad. y comentarios M. J. Meana, J. L. CUBERO & P. SÁEZ, Madrid, Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria.

IBN AL-'AWWÂM, 1864-1867, *Kitâb al-Filâḥa. Le Livre de l'agriculture*, trad. M. Clément-Mullet, Paris, Librairie Orientale et Americaine, 3 vols.

— 1988 (facsimile edition, 1802), *Libro de agricultura*, ed. y trad. J. A. Banqueri; estudio preliminar y notas J. E. Hernández y E. García, Madrid, Ministerio de A.P.A. y Ministerio de AA. EE, 2 vols.

IBN AL-ABBÂR, 1886-1889, *Al-Takmila*, ed. F. Codera, Madrid, Biblioteca Arabico-Hispana V-VI.

IBN BAṢṢÂL, 1995 (facsimile edition, 1955), *Libro de Agricultura*, ed. y trad. J. M. Millás Vallicrosa & M. 'Azîmân, Tetuán, 1955, facsimile edition with preliminary study and indexes by E. García & J. E. Hernández Bermejo, Sevilla.

IBN ḤAJJÂJ, 1982, *Al-Muqni', fī l-filâḥa*, ed. S. Jarrâr & J. Abû Safiyya, 'Ammâm, Majma', al-Luga al-'Arabiyya al-Urduniyya.

IBN LUYÛN, 1988 (reprinted Granada, 1975), *Tratado de agricultura*, ed. y trad. J. Eguaras Ibáñez, Granada, Patronato de la Alhambra y Generalife, D.L.

— *Kitâb Ibdâ', al-malâḥa wa-inhâ', al-raġâḥa fī uṣûl ṣinâ'at al-filâḥa*, manuscript n° XIV of the Escuela de Estudios Árabes in Granada.

IBN WÂFID, 1943, *El « Libre de les medicines particulars », versió catalana trescentista del texto árabe del « Tratado de los medicamentos simples » de ---*, ed. L. Faraudo de Saint-Germain, Barcelona, Real Academia de Buenas Letras.

Kitâb fī Tartīb awqât al-ghirâsa wa-l-maghrûsât. Un tratado agrícola andalusí anónimo, 1990, ed., trad. y estudio A. C. López y López, Granada, CSIC.



- LERCHUNDI José & SIMONET Francisco Javier, 1881, *Crestomatía arábigo-española*, Granada, Imprenta de Indalecio Ventura.
- LEVI-PROVENÇAL Évariste, 1921, *Les manuscrits arabes de Rabat (Bibliothèque générale du Protectorat français au Maroc). Première série*, Paris, Ernest Leroux.
- LÖFGREN Oscar & TRAINI Renato, 1975-1981, *Arabic Manuscripts in the Biblioteca Ambrosiana*, Vicenza, Neri Pozza, cop., 2 vols.
- MILLÁS VALLICROSA José María, 1943, « La traducción castellana del «Tratado de agricultura» de Ibn Wâfid », *Al-Andalus VIII*: 281-332.
- 1948, « La traducción castellana del «Tratado de Agricultura» de Ibn Baṣṣâl », *Al-Andalus XIII*: 347-430.
- 1954a, « Sobre bibliografía agronómica hispanoárabe », *Al-Andalus XIX*: 129-142.
- 1954b, « Un manuscrito árabe de la obra de agricultura de Ibn Wâfid », *Tamuda II*, n. 1: 87-96.
- MORATA Nemesio, 1934, « Un catálogo de los fondos primitivos de El Escorial », *Al-Andalus II*: 87-181.
- MOREL FATIO Alfred, 1892, *Catalogue des manuscrits espagnols et des manuscrits portugais* (terminé en collaboration avec M. Ch. Baudouin de Monny), Paris, Imprimerie Nationale.
- NAVARRO María de los Ángeles, « Un nuevo texto agrícola andalusí », in Expiración GARCÍA (ed.), *Ciencias de la Naturaleza en al-Andalus. Textos y Estudios II*, Madrid, CSIC: 155-169.
- REBSTOCK Ulrich *et al.* (1988), *Katalog der Arabischen Handschriften in Mauretanien*, Beirut, Orient-Institut der Deutschen Morgenländischen Gesellschaft, in Kommission bei Franz Steiner.
- ŞÂLIHİYYA Muḥammad ‘Îsâ, 1984, « Mulâhazât ‘alâ makḥṭûât al-filâḥa al-ṭabîqīyya al-mahfûza fī l-maktabât al-‘arabiyya wa-l-ajnabiyya », *Majallat al-majma’*, *al-ilmî al-‘arabî* 29: 566-586.
- SAUVAN Yvette *et al.*, 1987, *Catalogue des Manuscrits arabes. Deuxième partie: Manuscrits musulmans, Index nos. 6836-7214*, Paris, Bibliothèque Nationale.
- SEZGIN Fuat, 1986, *Beiträge zur Erschliessung der Arabischen Handschriften in Istanbul und Anatolien*, Frankfurt am Main, Institut für Geschichte der Arabisch-Islamischen Wissenschaften an der Johann Wolfgang Goethe-Universität, 4 vols.
- TERÉS Elías, 1975, « Los códices árabes de la 'Colección Gayangos' », *Al-Andalus XL*: 1-52.
- ULLMANN Manfred, 1972, *Die Natur- und Geheimwissenschaften im Islam*, Leyde, E. J. Brill.
- ‘UMAR M. I., 1986, *Fihrist al-makḥṭûât al-muṣawwara fī Maktabat Ma’had al-Turâth al-‘Ilmî al-‘Arabî (mulḥaq)*, Ḥalab.
- VAJDA Georges, 1953, *Index général des manuscrits arabes musulmans de la Bibliothèque Nationale de Paris*, Paris, CNRS.
- VOORHOEVE P. 1957, *Handlist of Arabic Manuscripts in the Library of the University of Leiden and other Collections in the Netherlands*, Leiden.

Notes

1 This other title given to his agricultural treatise appears in the marginal notes of the manuscript by the agronomist from Almería, Ibn Luyûn. Cf. *Kitâb fī Tartīb*, 1990:19.

2 This comes from the ancient manuscripts in the Zaytûna Library in Tunis, under number n° 5298. *Kitâb fī Tartīb*, 1990: 43.

3 Ibn Luyûn, *Kitâb Ibdâ’*, *al-malâḥa wa-inhâ’*, *al-rajâḥa fī uṣûl ṣinâ’*, *at al-filâḥa*, manuscript n° XIV of the Escuela de Estudios Árabes in Granada, folio 8r. The whole text of this note has been edited by García, 1999: 140-141.

4 For this subject we refer to previous pages and the following studies: Attié, 1969: 241-261; Carabaza, 1990: 71-81; Carabaza *et al.*, 1991: II, 1115-1132; Carabaza, 1994:169-192; García Gómez, 1984: 387-397; García, 1987: 333-341; Ibn Ḥajjâj, 1982: *dâl-râ’*; Millás Vallicrosa 1943: 284-293; Millás Vallicrosa, 1954b: 87-96.

5 This codex, from the Jallâwî collection, does not appear in any of the catalogues of the Rabat General Library in the Escuela de Estudios Árabes in Granada. This codex was consulted directly.

6 The contents of all the Arab manuscripts mentioned, except for the two from Tetuan and the codex from Tunis, are described in detail in Carabaza *et al.*, 1991: II, 1115-1132.

7 All the quoted manuscripts, except for the codex from Tetuan, are described by Carabaza *et al.*, 1991: II, 1119-1129.

8 Further information on this manuscript copy and the previous one can be consulted in Carabaza *et al.*, 1991: II, 1125-1128.



9 Regarding this and another miscellaneous manuscript belonging to M. 'Azîmân which have extracts from the works by al-Tighnârî and Ibn Luyûn, and by Ibn Baṣṣâl, cf. Millás Vallicrosa, 1954a: 129, 133.

10 On this text, which seems to be a summary of the treatise of Ibn Baṣṣâl, and the differences from the edition of J. M. Millás and M. 'Azîmân, cf. Carabaza *et al.*, 1991: II, 1116-1117.

11 This brief fragment has been edited and translated by M. A. Navarro, 1992: 155-169, although the author of this work doubts that Ibn Baṣṣâl is really the author.

12 This can be seen in greater detail in Abû l-Khayr, 1991: 23-29.

13 Different references of folios 39v-48v in García, 1987: 340; Millás, 1954a:127-140.

14 The references to these latter two manuscripts have been included in the article by Şâlihiyya, 1984: 568.

15 According to the copy, the author of the first is Ibn Ḥamdûn al-Ishbîlî, but the second is quoted as anonymous. Cf. Lévi-Provençal, 1921: 185.

16 Allouche & Regragui, 1958 : II, 273-274. In a note in the margin the author of the first is given as «*imâm al-Ṭangarî*».

17 Attributed to Ḥamdûn al-Ishbîlî.

18 Morata, 1934:105, 145 indicates this as another of the manuscripts which must have disappeared in the fire which affected the Escorial Library.

19 Further data on the previous as well as the present one are given in Carabaza *et al.*, 1991: II, 1129, 1131.

20 There is also a manuscript with a translation in Turkish of the treatise by Ibn al-Awwâm done in 1065 of the Hegira: it is n° 23 in the Library of Musée (Bursa), and is titled *Terceme i Kitâb al-falâ-a de Abû Zakarîya Yahyâ b. Muhammad b. Ahmad al-Avâm*: it covers 273 folios. Cf. Sezgin, 1986: III, 529.

21 This manuscript is not briefed in any of catalogues of the Escuela de Estudios Árabes. Was consulted directly to the Bibliothèque Royale and exist a microfilmed copy in the Escuela de Estudios Árabes.

22 We shall focus on the editions and translations of complete works of the Andalusî agronomists (or those of them which we know about), because of the obvious deficiencies in the partial editions and translations.

23 This divided text, XXXVIII, is «*de melesinar el çidrial cuando adolesçe el çidrial e fasen sus fojas amarillas, melesinan las desta guisa*» (page 98 of the translation by Millás and 'Azîmân), it comes gathered in page 39 of the manuscript, line 18 until the end of the same page.

24 Even the two later translations and their corrections are no improvement on these: the translation by M. Clément-Mullet and the one by C. Boutelou. Cf. Ibn al-Awwâm, 1864-1867; Ebn el Awam, 1878.

25 Some of these notes were translated by Lerchundi & Simonet, 1881.

26 We have this publication as an example of this work: Carabaza *et al.*, 2004.

Pour citer cet article

Référence électronique

Expiración García et Julia María Carabaza, « Studies on the agronomy of Al-Andalus », *Revue des mondes musulmans et de la Méditerranée* [En ligne], 126 | 2009, mis en ligne le 31 juillet 2014, consulté le 22 septembre 2022. URL : <http://journals.openedition.org/remmm/6465> ; DOI : <https://doi.org/10.4000/remmm.6465>

Auteurs

Expiración García
Julia María Carabaza

Droits d'auteur



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