

SCIENCE TRANSLATED

LATIN AND VERNACULAR TRANSLATIONS
OF SCIENTIFIC TREATISES IN MEDIEVAL EUROPE

Edited by

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José Manuel FRADEJAS RUEDA

**SHADHĀNIQĀT AL-BALANSIYYA
OR SHADHĀNIQĀT AL-BAḤRIYYA:
ON THE ARABIC TEXT AND THE LATIN TRANSLATIONS
OF THE CALENDAR OF CORDOVA**

0. Introduction

In 1961 Charles Pellat published a new trilingual edition of the Arabic text known as the *Calendar of Cordova* and Gerard of Cremona's Latin translation¹. Pellat based his edition on R. Dozy's² and, with the aid of the Latin text, was able to add a French translation of the Arabic text, thus offering a very useful piece of research. Four years later, the French Arabist François Viré published a very interesting article in which he explained the ornithological and falconry data present in the monthly agricultural epilogue. These explanations allowed Viré to propose some corrections to the text, as some of the words were *très mal rendues* and *défigurées* due to

l'incompétence d'un tardif traducteur en latin, [...], étranger au pays, peu versé, semble-t-il, dans l'art du vol et, certainement, très embarrassé par la langue andalouse, un arabe teinté, inévitablement, de roman³.

Furthermore, he proposed an alternative translation for some passages of the Arabic text of the *Calendar of Cordova*, because 'la fauconnerie [est] un domaine peu familier à l'orientaliste'⁴.

1. Romance Loanwords in Arabic

Certainly, in Arabic several bird-names can be traced back to Romance languages, or even to Latin, some of which can be found in the

1. Pellat Ch., *Le Calendrier de Cordoue* (Leiden, 1961).
2. Dozy R., *Le Calendrier de Cordoue de l'année 961. Texte arabe et ancienne traduction latine* (Leiden, 1873).
3. Viré F., 'La Volerie dans l'Espagne du X^e siècle à travers le calendrier de Cordoue', *Arabica* 12 (1965), p. 306-314, here p. 306.
4. Viré, 'La Volerie...', p. 306.

Calendar itself. This is the case of *gābya* (pl. *gawābī*), which is a loanword directly taken from the Latin *gavia* ‘gull’. Gerard of Cremona was unable to identify it and rendered it as *algaguab*⁵, a literal adaptation to Arabic. Another case is that of *farāṭil* (sing. *farṭāl*), derived from the Ibero-romance *pardal* ‘sparrow’. In this case the translator did a fine job when he translated it as *passeres*⁶. Moreover, Viré himself reminds us that many terms used by Arab falconers, mostly from the Maghreb, are of Romance origin. This can be illustrated by *tarshūn*, which is the Arabic rendering – through the distortion of *tarshūl* / *ṭarshūl* – of *torzuelo* ~ *terçuelo* ‘male hunting bird’⁷, or even *nblī*, if we accept Viré’s hypothesis that this word is a cognate of the Latin *nebula*⁸. Even an old eighth-century Arabic treatise on falconry, al-Ġiṭrīf’s *Kitāb ḍawāri aṭ-ṭayr*, makes use of a Romance loanword to designate the *Falco peregrinus pelegrinoides*: *balanjrīniyya*, which is the Arabic for the Latin *pelegrinus*⁹.

Nevertheless, one of the Arabic words is mistakenly explained by Viré as a Romance loanword. In this contribution I will try to demonstrate that it is, in fact, an Arabic word that was misspelled in the Arabic text on which Gerard of Cremona based his Latin translation of the *Calendar*.

In the farming, hunting, and weather information for the months of January, March and April there are mentions of the *shadhāniqāt al-balansiyya*¹⁰. These were rendered into Latin as ‘falcons Valentie’¹¹ and ‘falconum valentiorum’¹², that is, Valencian falcons. What Gerard of Cremona did was to interpret *balansiyya* as the place-name *Balansya* (Valencia). This place-name is also cited on January 22nd, when the Catholic Church celebrates the nameday of Saint Vincent, who was martyred in the city of Valencia in 304¹³. Therefore, translating *balansiyya* as *Valentia* was not a grave error, not even the work of an incompetent translator because, as Viré himself admits, ‘le rapprochement avec la ville de Valence était séduisant’¹⁴. In any case, Viré proposed to amend *balansiyya* and to translate it in a very different way.

5. Pellat, *Le Calendrier...*, p. 145.

6. Pellat, *Le Calendrier...*, p. 91.

7. Viré, ‘La Volerie...’, p. 309 n. 1.

8. Viré, ‘La Volerie...’, p. 312 n. 1.

9. al-Ġiṭrīf, *Traité des oiseaux de vol (Kitāb ḍawāri aṭ-ṭayr). Le plus ancien traité de fauconnerie arabe* traduit, introduit et annoté par F. Viré et D. Möller (Nogent-le-Roi, 2002), p. 84 and note 127.

10. Pellat, *Le Calendrier...*, p. 37, 61 and 77.

11. Pellat, *Le Calendrier...*, p. 37 and 61.

12. Pellat, *Le Calendrier...*, p. 77.

13. Pellat, *Le Calendrier...*, p. 33, line 23.

14. Viré, ‘La Volerie...’, p. 307 n. 1.

His main argument is not based on linguistics, but on a profound knowledge of falconry and ornithology. So he begins by explaining which birds of prey were available to a tenth-century Andalusian falconer:

Mis à part les faucons inconnus de l'avifaune hispanique, comme le Sacre, le Lanier et le Gerfaut que, seuls, les hauts personnages fortunés pouvaient acquérir des oiseleurs-marchands [...], les campagnards d'al-Andalus ne disposaient, sur place, pour fournir leurs équipages de vol, que de deux races géographiques du faucon Pèlerin (*Falco peregrinus*; en espagnol: halcon comun [sic]), de l'Autour et de l'Épervier; ce sont, précisément, ces quatre rapaces que nous trouvons mentionnés au fil des mois du *Calendrier*¹⁵.

At this point Viré reaches the conclusion that

avec le *shadhāniq al-balansiyya*, nous reconnaissons le Pèlerin de la sb./sp. *Brookei* Sharpe, plus faible de taille que les autres races, sédentaire commun et nicheur dans toute l'Espagne et le Portugal¹⁶,

and goes on to explain the strategy employed by falconers hunting with this kind of falcon, which

suivant l'épagueul dans sa quête et, dès l'arrêt de ce dernier, *balançait sur la remise, se balançait, tenait la balance*, c'est-à-dire tenait l'air en 'saint-esprit' au-dessus du groupe chien-gibier ... Cette tactique de *tenir la balançoire* est propre au Pèlerin [...] On retrouve les expressions de 'balancer sur la remise', 'se balancer sur l'espaigneul', 'tenir la balançoire', en synonyme de 'se soutenir dessus le chien' dans la plupart des théreuticographes médiévaux, et tous les lexicographes les ont relevées.

The conclusion Viré reaches, is that *balansiyya* is, in fact, the plural of *balansī*, a Romance loanword – I should add a Gallo-Romance loanword because all of Viré's data are of French origin – taken from *balancier*, which itself is derived from the Latin *bilancia* 'balance'. According to Viré, *balansī* is the adjective used to specify the species of the Peregrine falcon that lives in the Iberian Peninsula and which should be identified with the *Falco peregrinus brookei*.

Although I agree that the falcon mentioned in the months of January, March and April is the *Falco peregrinus brookei*, I totally disagree with his attempt to derive *balansiyya* from *balancier*.

15. Viré, 'La Volerie...', p. 307 n. 1.

16. The editors printed what they took from the Madrid manuscript enclosed between angled brackets.

2. The *Liber Regius* version

For nearly a century and a half, until the early 1980s, the only known Latin version of the *Calendar* was that of Gerard of Cremona published in 1838 by Guillaume Libri¹⁷, reedited by R. Dozy in 1873 and again by Ch. Pellat in 1961. However, in 1981 J. L. Martínez Gázquez and Julio Samsó edited another Latin version based on a manuscript housed in the Museum Episcopal of Vic (ms. 167, fol. 1r-8r), in northern Spain, which has the title of *Liber Regius siue descriptio temporum anni*. It is a thirteenth-century version, which can easily be dated between 1228 and 1235. The *terminus post quem* of 1228 is determined by the fact that patron saint of October 4th is ‘Sancti Francisci confessoris [sic] primi de ordine minorum, ciuitate Assissi’. It is known that Saint Francis of Assisi died in 1226 and was canonized two years later. Thus, this translation, or at least this copy, cannot have been made before 1228 unless it can be demonstrated that such information is an interpolation. The *terminus ad quem* of 1235 is based on a marginal note on fol. 18v:

Ne mireris, lector, precedentem numerum annorum maiorem subsequencium esse, quia tunc quando fuit scriptum hoc tabulatum currebat annus Domini M CC XXXV^{us}.

Besides this thirteenth-century copy, Martínez Gázquez and Samsó found another in the Biblioteca Nacional at Madrid (ms. 6036). This is a fourteenth-century manuscript which lacks the initial portion of the prologue, but which is of great importance as it helps to fill in the places where the Vic copy is unreadable.

Martínez Gázquez and Samsó believe that the *Liber Regius* version was produced in Catalonia and they base their judgement on two arguments. First, the two versions make use of different calendars of saints' days. In Gerard of Cremona's translation the calendar of saints' days is a pan-Hispanic one that conforms to the Mozarabic rite¹⁸ whereas in the *Liber Regius* it has been replaced by a Catalonian calendar that follows the Roman rite¹⁹.

17. Libri G., *Histoire des sciences mathématiques en Italie depuis la renaissance des lettres jusqu'à la fin du 17^e siècle* (Hildesheim, [1838–41] 1967).

18. A Spanish version was published by Simonet F., ‘Santoral hispano-mozárabe escrito en 961 por Rabi ben Zaid, obispo de Iliberis’, *Ciudad de Dios* 5 (1871), p. 105–116 and 192–212.

19. Martínez Gázquez J., ‘¿Una nueva traducción latina del Calendario de Córdoba del 961 en un manuscrito del siglo XIII?’, in: *Unidad y pluralidad en el mundo antiguo: Actas del VI Congreso Español de Estudios Clásicos* (Madrid, 1983), p. 373–379, here p. 375.

The second argument is the existence of two Catalanisms, which I believe to be rather weak evidence. The two words are *butheca* and *bleta*. *Butheca* is an Arabism meaning ‘melon, watermelon’, an adaptation of *al-baṭṭīka* (in Gerard of Cremona’s text it is rendered as *albateka*). Martínez Gázquez and Samsó²⁰ accept Corominas and Pascual’s opinion that it is a Catalan Arabism²¹, because the Castilian form *albudeca*, attested for the first time in 1537, derives from the Catalan *budeca*, documented for the first time in 1252, while the correct Castilian form is *badea*²². However, in the *Libro de Alexandre*, a Castilian poem written before 1228, we find the word *budefa* ‘low quality watermelon’, which shows a different way of rendering the Arabic khā (خ) as <f>, not unusual in the Hispano-Romance dialects²³.

The second proposed Catalanism is to be found in the translation of the Arabic word *silq* as *bleta* (Gerard of Cremona, *sicla*²⁴). Martínez Gázquez and Samsó believe that it looks like Catalan – ‘es forma sospechosamente catalana’²⁵. They base their reasoning on what they state that Corominas and Pascual say. Yet what these two lexicographers say is that ‘las formas modernas son tomadas del catalán y de la lengua de Oc’²⁶. I believe the anonymous translator has simply used a Latin word, common to most of the Latin and Romance-speaking world, to refer to a very common vegetable: the *Beta vulgaris* ‘Swiss chard’²⁷.

3. Gerard of Cremona’s version versus the *Liber Regius*

Both Gerard of Cremona’s version and the *Liber Regius* share the same contents, but there are some differences, mainly in wording, which

20. Martínez Gázquez J. & Samsó J., ‘Una nueva traducción latina del calendario de Córdoba (siglo XIII)’, in: J. Vernet (ed.), *Textos y estudios sobre astronomía española en el siglo XIII* (Barcelona, 1981) p. 9-78, here p. 52 n. 210. This work was also published as a book *Una nueva traducción latina del calendario de Córdoba (siglo XIII)* (Barcelona, 1982).

21. Corominas J. & Pascual J.A., *Diccionario crítico etimológico castellano e hispánico* (Madrid, 1981-1991), I, p. 123a.

22. According to Corominas and Pascual’s *Diccionario...* (I, p. 451b), *badea* is first recorded in 1423.

23. Steiger A., *Contribución a la fonética del hispano-árabe y de los arabismos en el ibero-románico y el siciliano* (Madrid, 1932), p. 218.

24. Pellat, *Le Calendrier...*, p. 173.

25. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 74 n. 355.

26. Corominas & Pascual, *Diccionario...*, I, p. 600a.

27. In the Italian translation of Moamin we find ‘frondi de sicla, cioè de blea’ (Glessgen M.-D., *Die Falkenheilkunde des ‘Moamin’ im Spiegel ihrer volgarizzamenti: Studien zur Romania Arabica* (Tübingen, 1996), I, p. 157 – Moamin III, 12, 11).

lead us to believe that the two translations descend from different versions of the Arabic text. Some fragments lead us to believe that the *Liber Regius* paraphrases Cremona's translation, while others point to an abridgement. This can be noticed, for example, in the list of saints' days for the month of March:

Gerard of Cremona	<i>Liber Regius</i>
in ipso est Christianis festum Emeterii et Celidonii. <Et sepulcra eorum sunt in civitate Calagurra> ²⁸	Emeterii et Celidonii, Calahorra ³⁰
<in ipso est Christianis festum Gregorii domini Rome> ²⁹	Gregorii pape ³¹

or in the falconry information for the month of May:

Gerard of Cremona	<i>Liber Regius</i>
Et ponuntur in muta accipitres et falcones, et remanent in muta usque ad principium Augusti aut ad finem eius, secundum quantitatem virtutis eorum et sanitates ipsorum, et egrediuntur pulli asipheti (<i>id est cristarelle</i>) et accipitrum ex ovis suis, et vestiuntur pennis usque ad triginta dies ³² .	et mutantur falcones et accipitres pennas suas et exeunt pulli sparuerini de ouis ³³ ,

or in the November farming information:

Gerard of Cremona	<i>Liber Regius</i>
et multiplicantur holera hyemis, sicut caules et sicla et napi et baucie et porri et rafanus. Et in ipso colliguntur arundines, et coagulantur fabe autumnales, et plantatur in agosto. <i>Et in ipso cooperiuntur viridia, et citrus et musa et sambucus, ut non noceat eis pruina.</i> Et in ipso colliguntur flores croci ³⁴ .	et colliguntur harundines et fructificant <fabe> autumnales qua agosto seminantur et multiplicantur olera hyemalia, uidelicet caules Romanorum et bleta et porra et rafani et flos croci colligitur ³⁵ .

28. Pellat, *Le Calendrier...*, p. 53. Pellat uses italics to indicate that the text enclosed between angled brackets does not appear in the Arabic text he edits.

29. Pellat, *Le Calendrier...*, p. 57.

30. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 35.

31. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 35.

32. Pellat, *Le Calendrier...*, p. 91.

33. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 48.

34. Pellat, *Le Calendrier...*, p. 173.

35. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 74.

Certainly, the *Liber Regius* may resemble a paraphrase of Gerard of Cremona's translation, especially when it changes the order in which the information is offered, as can be seen in the farming information for the month of February. Gerard of Cremona's version ends with the return of storks and swifts to the towns – 'et in ipso veniunt ciconie et yrrundines ad habitationes'³⁶. In the *Liber Regius* this is found in the middle, together with the information about the cranes' return to the river islands – 'grues ad insulas conuertuntur et ueniunt ciconie et hyrundines'³⁷. Nevertheless, the *Liber Regius* did not achieve its aim to put all the ornithological information together, as the farming epilogue begins 'aues amcantur'³⁸.

Yet, in some other places both Latin translations coincide whereas they differ from the Arabic text: the two of them add information not found in the known Arabic text. At the end of the month of April the *Calendar* says 'peacocks, storks and many other birds lay eggs'; in the Latin versions we are told what the birds do after they have produced eggs – they incubate them:

Gerard of Cremona

Liber Regius

et pariunt ova pavones et ciconie et multe aves, <et incipiunt incubare ovis>³⁹

et pariunt pauones et ciconie et incipiunt multe ex auibus fouare oua⁴⁰.

In the month of September Gerard of Cremona – 'et incipiunt sparagi primitivi in montibus'⁴¹ – and the *Liber Regius* – 'et inueniuntur sparagi primitiui montani'⁴² – inform us that the first asparagus is ready to be harvested. This is not to be found in the Arabic calendar.

Both Latin versions tell us that Dacianus martyred Saint Vincent, Saint Sabina and Saint Cristeta in the Spanish city of Abule⁴³ / Abela⁴⁴, which is the city of Ávila. The Arabic one, on the other hand, claims the martyrdom took place in the city of Guadalajara⁴⁵.

36. Pellat, *Le Calendrier...*, p. 49.

37. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 33.

38. This would seem to be a better translation than the 'frangunt ova aves' offered by Gerard of Cremona (Pellat, *Le Calendrier...*, p. 49), which Viré tried to amend ('La Volerie...', p. 308 n. 1).

39. Pellat, *Le Calendrier...*, p. 53.

40. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 35.

41. Pellat, *Le Calendrier...*, p. 145.

42. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 65.

43. Pellat, *Le Calendrier...*, p. 155.

44. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 68.

45. Pellat, *Le Calendrier...*, p. 155.

In any case, I believe that Gerard of Cremona and the *Liber Regius* share a common Arabic ancestor. I do not believe that both versions were made from the same original, but from two different, yet related witnesses slightly dissimilar from the *unicum* known to us.

4. *Balansiyya* or *bahriyya*?

Returning to the starting point of this article, the *Liber Regius* may help us to decide if we should read *shadhāniqāt al-balansiyya* and interpret it as Viré has done or if we can propose another reading. Let us have a look at the places of the *Calendar* where the *shadhāniqāt al-balansiyya* are mentioned, and study how they were translated by Gerard of Cremona on the one hand, and the *Liber Regius* on the other:

<i>Calendar</i>	Cremona	<i>Liber Regius</i>
wa-taltazimu l-shadhāniqāt al-balansiyya a‘shāsha-hā wa-ta’ <u>khudhu</u> fī l-sifād ⁴⁶ .	et faciunt falcones Valentie nidos suos, et inci-piunt coire ⁴⁹ .	Falcones marini nidificant et calcant ⁵² .
wa-fīhi tabīḍu l-shadhāniqāt al-balansiyya bi-l-ja-zā’ir wa-taḥḍunu <u>thalā-thīna</u> yawm ^{an} [ilā awwali abri]l ⁴⁷ .	et in ipso ponunt ova falcones Valentie in insula, et incubant super ova triginta diebus usque ad principium Aprilis ⁵⁰ .	et pariunt falcones marini, subponunt oua triginta diebus ⁵³ .
wa-fīhi <u>takhruju</u> firākh l-shadhāniqāt al-balansiyya min bayḍi-hā <u>thumma</u> tak-tasī bi-l-rīsh ilā <u>thalā-thīna</u> ⁴⁸ .	et in ipso egridiuntur pulli falconum valentiorum ex ovis suis; deinde vestiuntur pennis usque ad triginta dies ⁵¹ .	et exeunt pulli falconum de ouis et cooperiuntur pennis post dies triginta ⁵⁴ .

It should be noted that on two of the three occasions the Arabic text speaks of *shadhāniqāt al-balansiyya*, Cremona’s translation says *falcones Valentie*, and the *Liber Regius* reads *falcones marini*. The third time, the *Liber Regius* felt no need to specify the species of falcon; the author

46. Pellat, *Le Calendrier...*, p. 37.

47. Pellat, *Le Calendrier...*, p. 61.

48. Pellat, *Le Calendrier...*, p. 77.

49. Pellat, *Le Calendrier...*, p. 37.

50. Pellat, *Le Calendrier...*, p. 61.

51. Pellat, *Le Calendrier...*, p. 77.

52. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 27.

53. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 38.

54. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 43.

has been discussing the breeding of falcons and the other species mentioned in the *Calendar* is a non-breeding one: *shadhāniqāt al-libliyya – falconem allebiati*⁵⁵, *falcones deblensi*⁵⁶. According to the way the falcons are named in the *Liber Regius*, I am confident that the Arab text used by the anonymous translator read *shadhāniqāt al-baḥriyya*. Let us examine if such a reading is possible.

The *baḥriyya* falcons are mentioned in several Arabic treatises on falconry. When al-Ġiṭrīf describes the different species of falcons according to their colour, in his *Kitāb dawāri at-ṭayr*, he says that the black peregrines are the *baḥriyya*⁵⁷. In the anonymous tenth-century *Kitāb al-bayzara* the chapter devoted to the peregrine falcon – *shāhīn* – mentions a species under the name of *baḥrī*⁵⁸. In the fourteenth-century *Uns al-mala' biwaḥsh al-falā* by Muḥammad ibn Mankalī an-Nāṣirī, the *baḥriyya* falcons are mentioned in the chapter devoted to the peregrine falcon (*shāhīn*)⁵⁹, and in the same century Khudāyār Khān 'Abbāsī, in his *Qawānin al-ṣayyād*, says 'un altro tipo de *shāhīn* nero è il *baḥrī*' and 'il *baḥrī* è una specie de *shāhīn*'⁶⁰.

In al-Ġiṭrīf and the *Kitāb al-bayzara* the word *baḥri* was translated into French as *marin*, and in ibn Mankalī as *ultramarin*. Al-Ġiṭrīf goes even further when he says that *baḥriyya* falcons are those 'qui naissent et croissent dans les îles bordant les littoraux'⁶¹, and the *Kitāb al-bayzara* tells us that they 'sont ceux qui martellent aux abords de la mer'⁶². This coincides with the *Qawānin al-ṣayyād*: 'che nidifica presso il mare' and 'ma vive e nidifica preferibilmente sulle coste e nelle isole'⁶³.

The Spanish medieval version of Muḥammad ibn 'Abdallāh ibn 'Umar al-Bāzyār's *Kitāb al-jawāriḥ*, a translation finished on April 9th, 1250, names the two species of falcons, and says that:

La una manera dizenles mariniegos porque se engendran a partes de la mar e dizenles en arávigio *bahariet*. La .ii^a. dizenles en lengua persiana cozteniet, e éstos son los que se engendran en las pennas e en los montes; e

55. Pellat, *Le Calendrier...*, p. 145.

56. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 65.

57. al-Ġiṭrīf, *Traité...*, p. 85.

58. Viré F. (tr.), *Le Traité de l'art de volerie (Kitāb al-bayzara) rédigé vers 385/995 par le Grand-Fauconnier du calife fātimide al-'Azīz bi-llāh* (Leiden, 1967), p. 100.

59. Ibn Manglī, *De la chasse: commerce des grands de ce monde avec les bêtes sauvages des déserts sans onde*, translated by François Viré (Paris, 1984), p. 129 and 131.

60. Guizzo D., 'Il lessico ornitologico nel *Bāz-nāma*', in: Kh^wushḥal Khān Khatak, *Il libro del falcone* (Venezia, 2001), p. 112-124, here p. 115.

61. al-Ġiṭrīf, *Traité...*, p. 85.

62. Viré, *Le Traité...*, p. 103.

63. Guizzo, 'Il lessico...', p. 115.

la manera de los *baharís* son mejores que la manera de los coztenís, e depártense los *baharís* de los coztenís en que son mayores e an las cabeças más blancas, o más escontra amariellas e la color más clara, e los coztenís son en contra d'estos en que son menores e an las cabeças vermejas e la color más turbia⁶⁴.

Therefore, the epithet *bahri*, sometimes nominalized, was used by Arab falconers to denote a species of the Peregrine falcon. This substantiates the meaning offered by Daniele Guizzo 'varietà del falco pellegrino che vive e nidifica presso le coste'⁶⁵. Here Viré seems to contradict himself: in the endnotes to his translation of ibn Mankalī's treatise he says that the *bahri* falcons 'sont les migrants venant hiverner en climat méditerranéen; en fauconnerie, on les dit *passagers* ou *pris de passage*; ils arrivent des pays nordiques et de Sibérie où ils nichent'⁶⁶, while in the footnotes to the *Calendrier de Cordoue* he attributed this migrational behaviour to the *neblí*: 'à côté du faucon Pèlerin sédentaire et nicheur [...], l'Espagne méridionale connaît des Pèlerins étrangers, hivernants réguliers, venant de Scandinavie et de la Baltique [...] et de Sibérie'⁶⁷.

Another problem, which I will not deal with, is which falcons are to be identified with the epithet *bahri*, as Viré and Möller, in their translation of al-Ġitrif, say:

Tout ce passage consacré aux 'Pèlerins noirs' décrit, en fait, les deux espèces méditerranéennes de faucons [...]. La première est le faucon d'Éléonore (*Falco eleonora*) propre aux îles de la Méditerranée [...]. La seconde espèce est le faucon Concolore (*Falco concolor*) propre à l'Égypte⁶⁸.

But Viré himself, in a previous work, seems to identify the breeding peregrine falcon of Egypt not with the *Falco concolor* but with the Barbary falcon when he says 'l'Égypte connaît [...] comme nicheuse sédentaire, la race *Falco peregrinus pelegrinoides*'⁶⁹.

In Spanish the Arabism *baharí* (*bafarí* in Portuguese) has been used at least since 1250, the date of the first documentation of the word in Spanish used to name the *Falco peregrinus brookei*. Therefore, when the *Liber Regius* mentions the *falcones marini*, I believe that its anonymous

64. Moamín, *Libro de los animales que cazan*, ed. J.M. Fradejas Rueda (Madrid, 1987), p. 14 (italics mine).

65. Guizzo, 'Il lessico...', p. 115.

66. Ibn Manglī, *De la chasse...*, p. 272 n. 219.

67. Viré, 'La Volerie...', p. 312 n. 1.

68. al-Ġitrif, *Traité...*, p. 85 n. 137.

69. Viré, *Le Traité...*, p. 100 n. 1.

translator did not read *shadhāniqāt al-balansiyya* as Gerard of Cremona did but *shadhāniqāt al-baḥriyya*, a very well attested name in Arabic for a variety of the Peregrine falcon.

Now, the difficult part is to explain how *al-baḥriyya* (البحريّة) was converted or corrupted into *al-balansiyya* (البلنسية), a form not found anywhere else.

5. On Arabic script

It is a well-known fact that the Arabic script is rather confusing. Many Arabic letters are only distinguished by means of the diacritical dots they carry over or under them. Seventeen out of twenty-eight letters, which can be grouped in eight different sets, are identical and can be distinguished only by means of the diacritical dots: ص ش س ز ر ذ د خ ح ج ق ف غ ع ظ ط ض. This becomes more complicated by the fact that twenty-five letters have different figures depending on whether they are isolated, initial, medial or final. Let us have a look at the letters *jīm*, *hā'* and *khā'*:

	initial	medial	final	isolated
<i>jīm</i>	ج	ـجـ	ح	ح
<i>hā'</i>	ح	ـحـ	ح	ح
<i>khā'</i>	خ	ـخـ	خ	خ

It is clear that everything depends on where the dots are placed. Yet in early and medieval times the use of the dots was not compulsory; they were used sporadically, so there was ample scope for scribal errors. The diacritical dots could be omitted, misplaced, or even be generated by spots of ink accidentally dropped from a pen⁷⁰. To make things even worse, Arab scribes from al-Andalus used the dots in a different way from the scribes of Baghdad or Damascus. For example, an Andalusian scribe would mark the letter *fāh* (ف) with a dot below the letter and the letter *qāf* (ق) with one above, while the Damascus scribes would do just the opposite: a dot above for the *fāh* (ف) and below for the *qāf* (ق).

Although many scribes were very careful when writing, others were careless and anyone not well versed in the idiosyncrasies of a given scribe could easily mistake one letter for another. There are numerous

70. Latham J.D., 'Arabic into Medieval Latin', *Journal of Semitic Studies* 17 (1972), p. 30-67, here p. 33.

examples in Arabic manuscripts. Let us examine a few cases taken from the *Calendar* itself.

On March 11th we are informed of the change of season. The Arabic text refers to it by means of the word *nāb* (ناب) ‘canine’. Gerard of Cremona translated it as *porta*⁷¹ and the *Liber Regius* as *ianuam*⁷². Both of them misread the first letter, and read *bāb* (باب) ‘door’. This mistake could be easily made independently by both of them; it all depends on where the diacritical dot is placed: for the letter *nūn* (ن) above the letter, while for *bā* (ب) below.

The feast of Saints Emeterius and Celedonius, who were martyred in the town of Calahorra, is celebrated in the month of March. For Emeterius the Arab text reads *endirash* (اندراش) but in light of the Latin translations the correct form should be *emtirash* (امتراش)⁷³. Both words agree on the first – ‘alif (ل) – and the last three letters – *rā*, ‘alif, *shīn* (ش) —; the third one, a final *dhāl* or a medial *tā*’ could be easily mistaken (د / ت); the only difference between both forms being the initial *nūn* (ن) and the initial *mīn* (م).

Viré himself located some cases where Gerard of Cremona had misread the Arabic text. One of them is to be found in the month of July, where a quarry for the falcon is mentioned using the word *shaqāshiq*. This bird was unknown to Gerard of Cremona, who rendered it as *assacassik*. Pellat translated it as *merle d’eau* (*Cinclus cinclus*)⁷⁴ which, according to Viré, is an impossible quarry for any falcon. But if we read *saqāsiq* (sing. *saqsāq*) instead of *shaqāshiq* (sing. *shuqshūq* / *shaqshāq*), we will be confronted with a more likely quarry, whether it is a lapwing (*Vanellus sp.*) or a plover (*Pluvialis sp.*)⁷⁵. All we have to do is to delete three small dots above the Arabic letter to convert a *shīn* (ش) into a *sīn* (س).⁷⁶

The month of April is the right season to sow privet, basil, cauliflowers, green-beans and rice. For rice Gerard of Cremona uses *rizus*⁷⁷, but in the *Liber Regius* we are confronted with *ador*, an unknown Arabism⁷⁸. Here the anonymous translator either misread his original or

71. Pellat, *Le Calendrier...*, p. 55.

72. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 35.

73. This correction was proposed by Pellat in his *Le Calendrier...*, p. 53 note h.

74. Pellat, *Le Calendrier...*, p. 118.

75. Viré, ‘La Volerie...’, p. 311 n. 3.

76. In this case the *Liber Regius* omitted any specification of the water birds, contents itself by saying that *multiplicantur aues aquarum* (Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 57).

77. Pellat, *Le Calendrier...*, p. 76-77.

78. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 43.

his Arabic text misspelt *al-ruzz*. A dāl (د) is replaced by a rā' (ر), which in turn was interpreted as a zāy (ز). The substitution of dāl for rā' can be explained because they are very similarly shaped letters; the difference between rā' (ر) and zāy (ز) is the simple presence or absence of a dot above the graph.

So there is ample scope to believe not in a misreading on the part of Gerard of Cremona, but in a miswriting in the Arabic text on which Gerard of Cremona based his translation. *Al-balansiyya* (البلنسية) and *al-bahriyya* (البحراية) may look much alike, as they have the same three letters at the beginning of the word – 'alif, lām, bā' (الب) – as well as the two last ones – medial yā' and tā' marbūta' (ية). They differ only in the central part of the word: *al-balansiyya* has a sequence of medial lām, nūn and sīn (لنسس); in *al-bahriyya* we find ḥā' and rā' (حرحر). Given the fact that in cursive written by a careless hand the letters may be confused, miswritten or later misread, as I have already shown, the letters nūn (ن) and rā' (ر) can be easily misinterpreted. However, it is almost impossible to give a paleographic explanation for the replacement of ḥā' (ح) by lām (ل) and sīn (س). I am unable to explain this tiny change, just as I cannot explain how Gerard of Cremona read *ramādi* 'ash-gray'⁷⁹ three times instead of *ramādi* 'igneus', which is the reading of the *Liber Regius*⁸⁰. I cannot explain how a ḍād (ض) was confused with a dāl (د), unless it can be demonstrated that somebody was reading aloud the Arabic text and Gerard of Cremona misinterpreted the reader. There could be many more palaeographic explanations, even psychological ones, but these are neither very sound nor easy to discover and formulate.

6. Conclusion

I must conclude that Gerard of Cremona's Latin translation was based on a defective Arabic text that can be corrected using the version contained in the *Liber Regius*, even though the *Liber Regius* was made from an Arabic text belonging to a different branch than the one used by Gerard of Cremona. This is possible because both share a common ancestor.

Finally, Gerard of Cremona's translation of Valencian falcons was based on a corrupted reading. Therefore, in the Arabic text published by

79. Pellat, *Le Calendrier...*, p. 109, 129 and 139.

80. Martínez Gázquez & Samsó, *Una nueva traducción...*, p. 54, 60 and 63. *Ramādi* is the name that the Arabs give to the summer rain.

Dozy and Pellat the expression *shadhāniqāt al-balansiyya* (شدانقات
البلنسيّة) should be corrected to read *shadhāniqāt al-baḥriyya* (شدانقات
البحريّة).

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