MEDIEVAL BERBER ORTHOGRAPHY

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Introduction

In the Middle Ages, Berber was written in the Maghribi style of the Arabic script, in what is to all appearances a standardized orthography. The earliest known examples of the medieval Berber spelling date from the middle of the 10th century A.D., while the youngest examples date from the 14th century.

Although there is some variation in the representation of a number of consonants, the orthography is remarkably consistent. In this respect it is quite unlike the early orthographies of the European vernaculars, where the same word is often written in different ways even within one line of text. This consistency implies that the Berber orthography was consciously designed, and that it was formally taught to berberophones.

It is to be noted that the highest consistency is found in the oldest manuscripts. Copies of medieval texts dating from the post-medieval period, when the old orthography had fallen into disuse, show varying degrees of corruption. This is partly due to some copyists being non-berberophones. Other copies were made by speakers of Tashelhit, which from the end of the 16th century up to the present has been written in a spelling which is fundamentally different from the medieval orthography (see on this orthography van den Boogert, 1997, chapter 3).

This article will first present a concise survey of the available sources, followed by an explanation of the rules and conventions of the orthography.¹ It is hoped that this will enable future editors to transcribe and interpret medieval Berber materials more accurately than has hitherto been the case.

¹ Some of the basic rules of the medieval orthography were noted by Marcy in an article (1932).
The sources

The sources for our knowledge of the medieval orthography are much more numerous than one might think. In fact, a number of these sources have been available in print for quite some time, although Berberologists have so far failed to exploit them. The sources can be divided into four groups:

(1) Pharmacological manuals. Almost all works on this subject that were written in the Maghrib contain a number of Berber names of plants and animals, sometimes only a handful, but in some cases more than a hundred. The following published sources were consulted for this article:

- Ibn ‘Abdūn of Seville, (fl. 1100 A.D.), ‘Umday at-Ṭābīb (ed. al-Khaṭṭābī, 1990 and 1996), contains more than 250 Berber names of plants.²
- Ibn Beklāresh of Saragossa, al-Mustaʿīnī (written ca. 1000 A.D.), contains some forty Berber names. Most of these are quoted by Renaud in an article (1930) and in his annotations to the edition of the Tuhfa. Some names are mentioned by Dozy in his Supplément.
- Maimonides of Cordova (d. 601/1204), Sharḥ Asmāʾ al-ʿUqqār (ed. and tr. Meyerhof, 1940), contains 27 Berber names of plants.
- Ibn al-Baiṭār of Malaga (d. 646/1248), al-Jāmiʿ (ed. Boulaq, 1874-5, tr. Leclerc, 1877-83, contains some 55 Berber names of plants and animals. These Berber materials were studied by René Basset in an article (1899); his transcriptions are generally imprecise and he presents only 41 out of 55 names.

The editions by al-Khaṭṭābī of Ibn ‘Abdūn, and the Boulaq edition of Ibn al-Baiṭār are not up to modern scientific standards, but they are serviceable for our present purpose. Some important pharmacological manuals containing Berber materials remain unpublished, among them works by az-Zahrāwī (Abulcasis), as-Suwaydī and al-Idrīsī (on whom see Ullmann, 1970, pp. 149-151, 284, 278).

² The same edition was published twice (Rabat, 1990 and Beirut, 1996), with some revisions and a different numerations of the entries.
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Berber names of plants in medieval spelling are often quoted in post-medieval sources, among them:

- al-Jazāʾīrī (fl. 1130/1717-8), Kashf ar-Rumūz (tr. Leclerc, 1874), ca 50 Berber names.

{p. 359} (2) Arabic works on history, geography and biography. Four of these sources were examined for this article:

- The anonymous Kitāb al-Ansāb (ed. and tr. Lévi-Provençal, 1928).
- The memoirs of Abū Bakr ibn ‘Alī as-Ṣanḥājī, a close companion of Ibn Tumert, known by the nickname al-Baidhaq ‘the Pawn’ (ed. and tr. Lévi-Provençal, 1928).

These two texts, written in 12th and 13th centuries A.D., deal with the early history of the Almohads. They contain hundreds of personal names, tribal names and place names as well as a dozen phrases in Berber. Marcy has tried, with scant success, to transcribe and translate the phrases in an article (1932).

- al-Bakrī (d. 487/1094), Kitāb al-Masālik wa-l-Mamālik (ed. de Slane, 1857), contains many Berber place-names.³

(3) The Arabic-Berber dictionary Kitāb al-Asmāʾ compiled in the year in 540/1146 by Ibn Tunart (ابن تونارت, 478-567 A.H., 1085-1172 A.D.). This is the richest source for medieval Berber, containing more that 2,500 Berber words and phrases, including more than 250 names of plants.⁴

(4) The ‘Leiden fragment’ (Leiden ms. Or. 23.306). This is a unique fragment

³ Some of these names were studied by Chaker (1981).
⁴ An edition of Ibn Tunart’s Berber materials is in preparation by the present author. For a brief description of this source see also van den Boogert, 1998, pp. 11-13.
consisting of one leaf from a medieval manuscript (possibly 14th c.). The leaf contains a total of sixteen lines of continuous Berber text, written in calligraphic script. The subject of the text is ethics. This fragment may be seen as the ‘smoking gun’: apart from its mere existence, its contents as well as its external appearance are clear evidence that a mature and well-established written tradition in Berber existed in the medieval period. An edition and full analysis of the Leiden fragment is being prepared by the present author.

In the following exposition the rules and conventions of medieval Berber spelling will be illustrated mainly with plant names taken from the above-mentioned pharmacological handbooks and from Ibn Tunart’s dictionary.

Judging from the Leiden fragment, medieval Berber texts appear to have been written with full vocalization. In most of the other sources, Berber words are fully or partially unvocalized. The examples below will be quoted without vocalization. In cases where it is necessary to know the full vocalization, a transliteration will be given between square brackets.

**Word-internal vowels**

Medieval Berber orthography distinguishes four vowels: \( a, i, u \) and \( e \) (schwa). In word-internal position, the vowels \( a, i \) and \( u \) are written with the \( ḥurūf al-madd: \) \( alif \) represents \( a \), \( ya’ \) represents \( i \) and \( waw \) represents \( u \):\(^5\)

\[
\begin{align*}
\{p. 360\} & \quad \text{تاسافت} & \text{tasāft} & \text{‘oak’} \\
\text{تیزنیرت} & \text{tiznīrt} & \text{‘fan palm’} \\
\text{تولولیت} & \text{tulūlīt} & \text{‘caper’} \\
\end{align*}
\]

In unvocalized script, the central vowel \( e \) (schwa) is not represented in word-internal position. Schwa may also occur in open syllables:

\[
\begin{align*}
\text{تامماشت} & \quad \text{tamemmašt} & \text{‘tamarisk’} \\
\text{تاسلت} & \quad \text{tasselt} & \text{‘laurel’} \\
\text{یلودی} & \quad \text{yeludi} & \text{‘Ranunculus sp.’} \\
\end{align*}
\]

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5. An alphabetical list of quoted forms with references is appended at the end of this article.
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In fully vocalized script, schwa is most frequently written with fatha. In some sources it is written with kasra.

Word-initial vowels

In the Kitāb al-Ansāb and in the memoirs of al-Baidhaq, initial i- and u- are regularly written with alif-madda followed by yā' and wāw. Initial a- is written with alif-madda preceded by a high ‘chairless’ hamza:6

<table>
<thead>
<tr>
<th>Arabic</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>آيت ورسان</td>
<td>Ayet Wersanen</td>
</tr>
<tr>
<td>آيفتشتالن</td>
<td>Ifeštalen</td>
</tr>
<tr>
<td>أوغزافن</td>
<td>Uγzasfen</td>
</tr>
</tbody>
</table>

The other sources contain only one example of an initial vowel other than a- written with alif-madda (Tuḥfa no 17):

آداد  udad  ‘Barbary sheep’

This use of madda to indicate the presence of a word-initial vowel, a- as well as i- and u-, is typical of medieval Berber orthography. It is clearly a divergence from contemporary Arabic usage.7

In fully or partially vocalized forms in Ibn Tunart’s Kitāb al-Asmā’, initial a- is written either with alif-madda, or with alif-madda with preceding low chair-less hamza, or with alif with preceding hamza:

<table>
<thead>
<tr>
<th>Arabic</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>آمكراز</td>
<td>‘plowman’</td>
</tr>
<tr>
<td>ءادرار</td>
<td>‘Chinese lantern’</td>
</tr>
<tr>
<td>ءاغاز</td>
<td>‘fruit of the fan palm’</td>
</tr>
</tbody>
</table>

These spellings of initial a- are also occasionally found in the other sources, especially alif-madda.

6. Lévi-Provençal has made several changes in the spelling of the Berber materials in the printed edition. The following exposé is based on an examination of the photographic plates added to the edition (esp. plate III).
7. On the use of madda in Maghribi-Arabic spelling see van den Boogert, 1989, p. 33.
In vocalized forms, Ibn Tunart writes initial *i* with *alif* with subscript *hamza*, followed by *ya*:

\[ \text{إيردن} \quad \text{irden} \quad \text{‘wheat’} \]

Initial *u* is written with *alif* with hamza written through its middle (reproduced here with superscript *hamza* for typographical reasons), followed by *waw*:

\[ \text{أوماد} \quad \text{ummad} \quad \text{‘diss grass’} \]

Word-initial *schwa* is represented by *alif* (with superscript *fatha* in vocalized text):

\[ \text{افسوا} \quad \text{efṣu} \quad \text{‘card (wool)!’} \\
\text{انس} \quad \text{ennes} \quad \text{‘of him’} \\
\text{وار الآغ} \quad \text{war ellay} \quad \text{‘dodder’} \]

In the other sources, Berber words are usually left unvocalized. When a word is written without vocalization, word-initial *a* is written with *alif* and word-initial *i* - and *u* - are written with *alif* followed by the appropriate *harf al-madd*:

\[ \text{ادمام} \quad \text{admam} \quad \text{‘medlar’} \\
\text{ايغري} \quad \text{iyrey} \quad \text{‘asphodel’} \\
\text{اوكان} \quad \text{ukkan} \quad \text{‘Caralluma europea’} \]

Note that in the absence of vocalization, word-initial *alif-waw* may represent either *u* - or *aw* - and *alif-yā* may represent either *i* - or *ay* -:

\[ \text{أوماد} \quad \text{ummad} \quad \text{‘diss grass’} \\
\text{اوسرغينت} \quad \text{awseryint} \quad \text{‘Corrigiola telephifolia’} \\
\text{ايزيري} \quad \text{izrey} \quad \text{‘wormwood’} \]

---

8. Also written as one word *وارلاغ* warellay. Etymologically *war* ‘he who has not’ and *allay* ‘stalk, stem’ (cf. Touareg *allay* ‘javelin’, *tallaq* ‘wooden shaft of a lance’?). The epiphytic dodder (*Cuscuta epithymum*) indeed has no rooted stem, cf. also its name in Tashelhit, *azzar n tmγarin* ‘women’s hair’.
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ایرني
ayerni
‘friar’s cowl’

On some examples in the work of Ibn al-Baiṭār of a divergent way of spelling word-initial vowels see below.

In order to present as clear a picture as possible, in the examples quoted below word-initial vowels will be written with simple alif, without hamza and/or madda, irrespective of the spelling found in the source.

Word-final vowels

Word-final -a is regularly written with alif. It is occasionally written with alif maqṣūra or with ḥā’:

- تایدا
 ︼ tayda
 ︼ ‘pine’
- تورژى
 ︼ turza
 ︼ ‘apple of Sodom’
- تاسیلوه
 ︼ tāsliɣwa
 ︼ ‘carob’

Word-final -i is written with yā’, usually without its diacritical dots:

- اسلى
 ︼ astili
 ︼ ‘dill’
- تيبي
 ︼ tibi
 ︼ ‘mallow’

Word-final wewed, representing either the vowel -u or the consonant -w, is often followed by an alif. This alif is a purely graphical device, and does not represent a vowel:

- وايللو
 ︼ waytellu
 ︼ ‘henbane’
- خيزو
 ︼ xizzu
 ︼ ‘carrots’
- افرسيو
 ︼ afersiw
 ︼ ‘fern’
- تيلفاو
 ︼ tifaw
 ︼ ‘lupin’

In the modern standard orthography of Arabic this so-called alif al-wiqa‘ya ‘prophylactic alif’ is written with plural verbal forms only. In the spelling of the Koran it is used more widely, e.g. II 269 َلاَّلَهُ يَمْحَواء 39 اولوا الابیب
The consonants

The representation of the following consonants poses no problems:

<table>
<thead>
<tr>
<th>Consonant</th>
<th>Representation</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ب</td>
<td>ibawen</td>
<td>'beans'</td>
<td></td>
</tr>
<tr>
<td>ت</td>
<td>tibitast</td>
<td>'beet'</td>
<td></td>
</tr>
<tr>
<td>خ</td>
<td>tizext</td>
<td>'willow'</td>
<td></td>
</tr>
<tr>
<td>د</td>
<td>amrad</td>
<td>'acacia'</td>
<td></td>
</tr>
<tr>
<td>ر</td>
<td>armas</td>
<td>'orache'</td>
<td></td>
</tr>
<tr>
<td>س</td>
<td>azenzu</td>
<td>'clematis'</td>
<td></td>
</tr>
<tr>
<td>ش</td>
<td>asasnu</td>
<td>'strawberry tree'</td>
<td></td>
</tr>
<tr>
<td>ظ</td>
<td>tašentit</td>
<td>'rye'</td>
<td></td>
</tr>
<tr>
<td>گ</td>
<td>taryal</td>
<td>'mandrake'</td>
<td></td>
</tr>
</tbody>
</table>

(p. 363) The spelling of the consonants d, z, g and ŋ is more complicated. Before looking at how these consonants are written, it is useful to take a brief look at the way in which a borrowed script is adjusted to represent consonants that are not present in the language for which the script was originally designed. An almost universally applied method of adaptation is to write a consonant for which the borrowed script has no separate letter with the letter that represents its nearest equivalent in the perception of the native speaker. This is usually its voiced or voiceless counterpart. For example, in early Persian orthography, the consonant g was written with the letter گاف, which also represented Persian k. In the same manner, the Persian consonant ئ was written with the letter گيم, which also repres-
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This method was also applied in the representation of Berber consonants for which the Arabic script has no separate letter.

Thus, the consonant ẓ is written with tā' (voiceless counterpart):

\[
\text{انكلكود} \quad \text{انكود} \quad \text{تيكيدا}
\]

Note that at the time when the Berber orthography was devised, the letter ض, which in modern transcription systems is usually transcribed as ẓ, probably did not represent a dental stop ẓ but rather an interdental or lateral fricative. In any case, Arabic t was apparently perceived as the nearest equivalent to Berber ẓ and hence the letter tā' was chosen to represent ẓ. Note also that Arabic t is replaced with ẓ in loanwords, e.g. Arabic tabīb ‘doctor’ becomes adībīb in Berber. It is also possible, though not probable, that medieval Berber had t instead of ẓ (voiceless t is still found in some dialects, e.g. in Jabal Nafūsa and the Middle Atlas).

The letter tā' also represents ꠪ (tense counterpart of ẓ):

\[
\text{اکطوم} \quad \text{ageṭṭum} \quad \text{‘twig’}
\]

The consonant z is written either with ṣāy (non-pharyngealized counterpart) or with ṣād (voiceless counterpart):

\[
\text{تافرژيت} \quad \text{taferżit} \quad \text{‘colocynth’}
\]
\[
\text{اصوكا} \quad \text{azuka} \quad \text{‘thuya’}
\]

The sources contain an explicit statement that the letter ṣād represents z: Ibn al-Ḥasshā’ mentions the name الألصص َلَزَز ‘Daphne gnidium’ and indicates its pronunciation by adding the phrase بَاِن ْاُس-ṣād و-ṣāy, ‘between s and z’, i.e. a consonant which is pharyngealized like s and voiced like z.¹⁰

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9. At a later stage, the two values of each letter were differentiated by forming the separate letters ğim and ḡaf by means of the addition of three diacritical points to ġim and kāf.

Ibn Tunart consistently uses ṣād to write ẓ. In the other sources there seems to be free variation between ẓāy and ṣād.

In a few rare cases, the letter ṣād represents ṣ:

<table>
<thead>
<tr>
<th>Arabic</th>
<th>Romanization</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>تيبينصتت</td>
<td>tibinṣert</td>
<td>'marsh mallow'</td>
</tr>
<tr>
<td>أصغر</td>
<td>aṣyer</td>
<td>'wood, bush'</td>
</tr>
</tbody>
</table>

In the case of the well-attested plant name tibinṣert, the ṣ can be explained etymologically, as this name appears to be a contraction of تيبينصتت مصرا tibi en Meser 'mallow of Egypt' (original form mentioned by Ibn Tunart). In the case of aṣyer, the spelling represents the form [aṣyer] (the emphatic r is never distinguished from r in the spelling) which is a variant of اسفر aṣfer (also attested).

The consonant g is written either with ǧīm, kāf or qāf:

<table>
<thead>
<tr>
<th>Arabic</th>
<th>Romanization</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>أيجل</td>
<td>idgel</td>
<td>'cedar'</td>
</tr>
<tr>
<td>انكارف</td>
<td>angaref</td>
<td>'chaste tree'</td>
</tr>
<tr>
<td>انمزكور</td>
<td>amezgur</td>
<td>'sorghum'</td>
</tr>
</tbody>
</table>

One plant name is found in the sources with all three spellings:

<table>
<thead>
<tr>
<th>Arabic</th>
<th>Romanization</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>أرجان</td>
<td>argan</td>
<td>'argan'</td>
</tr>
<tr>
<td>اركان</td>
<td>id.</td>
<td>'id.'</td>
</tr>
<tr>
<td>ارقان</td>
<td>id.</td>
<td>'id.'</td>
</tr>
</tbody>
</table>

Note that the name argan denotes a tree (Argania spinosa) which does not grow in berberophone areas where original g can become ẓ.11 It is therefore certain that ǧīm represents g, as the form urniture arzan does not exist.

That ǧīm represented g can also be deduced from the spelling of some Arabic nisbas. For instance, members of the Tashelhit-speaking High Atlas tribe whose modern name is Igdmmn use the nisba الجدموي al-Jadmīwī,12 which is derived from:

11. On g > ẓ see Kossmann, 1995.
12. The alternative spelling الجدموي al-Kadmīwī is also found.
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from the medieval Berber spelling ṭigdmīwen.

The letter qāf also represents qq (tense counterpart of γ):

<table>
<thead>
<tr>
<th>Arabic</th>
<th>Latin</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ازارور</td>
<td>azeqqur</td>
<td>'tree-trunk'</td>
</tr>
<tr>
<td>تيقيى</td>
<td>tiqqi</td>
<td>'juniper'</td>
</tr>
</tbody>
</table>

In most sources the choice between ġim or kāf for g appears to be free. Qāf is consistently used by Ibn ‘Abdūn, but it is rare in the other sources. It is probable that the variation between ġim and kāf is the result of historical developments (see below).

The consonant ź is written with ġim or šīn:

<table>
<thead>
<tr>
<th>Arabic</th>
<th>Latin</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>اناژل</td>
<td>anaţel</td>
<td>'bramble'</td>
</tr>
<tr>
<td>تونژیفین</td>
<td>tunţifin</td>
<td>'pearl barley'</td>
</tr>
</tbody>
</table>

(p. 265) Ibn ‘Abdūn of Seville, who mentions the name إیش حیز ‘terebinth’ (a Zenatic form), precisely indicates the pronunciation of šīn by adding the phrase bayn aš-šīn wa-z-zāy, ‘between š and z’, i.e. a consonant which is palatal like š and voiced like z (ed. al-Khaţābī, 1996, no 1584).

Note that ţţţ is always written with ġīm:

<table>
<thead>
<tr>
<th>Arabic</th>
<th>Latin</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>اژژیج</td>
<td>azeţţig</td>
<td>'flower'</td>
</tr>
<tr>
<td>تاجژاشت</td>
<td>tozeţţgašt</td>
<td>'convalescence'</td>
</tr>
</tbody>
</table>

The variation found in the representation of g and ź is probably the result of phonological changes that took place in the spoken Arabic of the Maghrib. It is possible to distinguish two basic stages in the development of the Berber orthography, as set out in the table below.
At stage 1, the letter "g" was chosen to represent Berber "g". At this time, "g" must have represented Arabic "g", or perhaps "d". We have no knowledge of any variety of Arabic spoken in the Maghrib that has or had "g" or "d" corresponding to "g". An indication that such a dialect may once have existed is perhaps found in the Berber loanword "timegida" 'mosque', which corresponds to an Arabic form "mesgida" or "mesgida" rather than the attested "mesjid" or "mesgid" (standard "masjid"). In addition, Ibn Tunart mentions a form "iteggaren" 'traders', cf. Arabic "tažer" (standard "tāţir") 'trader'.

At stage 1, the letter "g" could not be used for Berber "z", so that "šm" (voiceless counterpart) was chosen instead.

At stage 2, Arabic "g" had changed to "ž" or to "z", so that "gém" became available to write Berber "ž". Berber "g" was then written with "kaf" (voiceless counterpart).

The Leiden fragment is the only source which consistently uses "kaf" for "g", and which can thus be taken as representing stage 2. No source is available at present which represents stage 1. All other sources seem to represent an intermediate, transitional stage in the development of Berber orthography:

<table>
<thead>
<tr>
<th>letter</th>
<th>Arabic</th>
<th>Berber</th>
</tr>
</thead>
<tbody>
<tr>
<td>ج</td>
<td>&quot;g&quot; or &quot;d&quot;</td>
<td>&quot;ž&quot;</td>
</tr>
<tr>
<td>ش</td>
<td>&quot;š&quot;</td>
<td>&quot;š&quot;</td>
</tr>
<tr>
<td>ل</td>
<td>&quot;k&quot;</td>
<td>&quot;k&quot;</td>
</tr>
</tbody>
</table>

13. Cf. also Spanish "mezquita".
The most illuminating example of this intermediate stage is provided by the Kitāb al-Ansāb, in which ǧīm is written with ǧīm or kāf and in a few cases with ǧīm with a small superscript kāf. In the printed edition, Lévi-Provençal has more or less systematically substituted kāf with three superscript dots (a post-medieval innovation) for ǧīm or kāf representing g. The original spelling with ǧīm + superscript kāf can be seen in the facsimiles, cf. plate II, line 1, Abū Wezreg and plate IV, line 13, جزولهة Guzūla.14

The retention of ǧīm to write g, and of șīn to write ẓ, long after Arabic g/g had changed to ǧ/ẓ, is the result of the inertia that is characteristic of an established orthography.

Labialization

The labialization of velar consonants is indicated in vocalized script with the vowel sign damma, which may be written either on the letter representing the velar itself or on the preceding letter:

تالقت [tāluqqīt] talegˇwit ‘white broom’
أكار [ākuṯār] akˇtar ‘yarrow’ 15
تاغندست [tāγundast] taryˇendest ‘pellitory’
یدختن [yadduxtan] yeddexˇten ‘mistletoe’ 16

Ibn al-Baitār’s spelling of vowels

A divergent system to represent word-initial a- in Berber plant names is encountered in the initial entries in Ibn al-Baitār’s Jāmū. This system is also found in other sources, but only for initial ā- in the Arabic transcription of Greek plant names.

15. The noun akˇtar, mentioned by al-Kutāmī and Ibn al-Baitār, contains what is perhaps the earliest attested example of spirantization. Ibn al-Baitār quotes Abū al-‘Abbās an-Nabāṭī saying that this plant is ‘well-known in the eastern part of the ‘Udwa’ (maˇrāf bi-šarq bilād al-‘udwa).
16. Etymologically yeddexˇ ‘he sticks (to)’ (3sgm) + ten ‘them’ (3plm): the sticky seeds of mistletoe cling to the branches of trees where they germinate.
Ibn al-Baitār's entries nos 2-6 are all Berber plant names. The initial vowel \( \textit{a-} \) is written with \textit{alif-madda}, followed by a second \textit{alif}:

\[
\begin{align*}
\text{آاطريلال} & \quad \text{adereylal} & \quad \text{‘false bishop’s weed’} \\
\text{آاكتار} & \quad \text{ak\text{"u}tar} & \quad \text{‘yarrow’} \\
\text{آارغيس} & \quad \text{aryis} & \quad \text{‘barberry’} \\
\text{آاميلس} & \quad \text{ameliles} & \quad \text{‘buckthorn’} \\
\text{آاقشروا} & \quad \text{agešru} & \quad \text{(unidentified)}
\end{align*}
\]

\{p. 367\} The same spelling is used in entry no 1, which is a Greek name:\textsuperscript{17}

\[
\text{آالسن} \quad \text{ālus} \quad \text{‘alyssum’, Gr. \textit{αλυσον}}
\]

The logic behind this convention is that in this way all initial vowels are written with \textit{alif} followed by the appropriate \textit{harf al-madd}, i.e. \textit{alif-wāw} for \( \textit{u-} \), \textit{alif-yā} for \( \textit{i-} \) and \textit{alif-alif} for \( \textit{a-} \).

Beginning with entry no 7 (Arabic \textit{abhal} ‘savin’), Ibn al-Baitār has abandoned this cumbersome spelling of initial \( \textit{a-} \). In the remaining part of his work, initial \( \textit{a-} \) is written with single \textit{alif} in Berber as well as in Arabic and Greek names. The other Berber names with initial \( \textit{a-} \) presented as main entries in the \textit{bab al-alif} are:

\[
\begin{align*}
\text{اداد} & \quad \text{addad} & \quad \text{‘atryctylis’} \\
\text{ادربيس} & \quad \text{aderyis} & \quad \text{‘thapsia’} \\
\text{ارجان} & \quad \text{argan} & \quad \text{‘argan’} \\
\text{ازرود} & \quad \text{azrud} & \quad \text{‘melilot’}
\end{align*}
\]

Another practice which Ibn al-Baitār quickly abandoned is the explicit description of the vocalization of a name. This is found in his first five entries, and sporadically in the rest of the book. From these explicit vocalizations it appears that Ibn al-Baitār used \textit{kasra} instead of \textit{fatha} to represent \textit{schwa} (explicit vocalization between square brackets):

\textsuperscript{17} Fifteen examples of initial double \textit{alif} representing \( \textit{a-} \) in Greek names are found in Dietrich's \textit{Dioscurides triumphans} (see index to the Arabic text).
Medieval Berber orthography

<table>
<thead>
<tr>
<th>Arabic</th>
<th>Modern Berber</th>
</tr>
</thead>
<tbody>
<tr>
<td>آتریللا</td>
<td>[ätiriylä]</td>
</tr>
<tr>
<td>آکتار</td>
<td>[äkutär]</td>
</tr>
<tr>
<td>آریس</td>
<td>[är'yiys]</td>
</tr>
<tr>
<td>آملیلیس</td>
<td>[ämililiis]</td>
</tr>
<tr>
<td>آدیریللا</td>
<td>aderey'lal</td>
</tr>
<tr>
<td>آکیار</td>
<td>akê'yar</td>
</tr>
<tr>
<td>آریس</td>
<td>ar'yis</td>
</tr>
<tr>
<td>آملیلیس</td>
<td>ameliles</td>
</tr>
</tbody>
</table>

In the older spelling of Arabic, the hurūf al-madd representing the long vowels ı and ı could be written with or without sukūn.\(^{18}\) Thus, in the spelling of Berber ar'yis, the vowel ı is explicitly written with ɣayn maksūra and yā' sākina, i.e. ɣayn with kasra and yā' with sukūn.\(^ {19}\) However, since Ibn al-Baitār uses kasra to represent schwa, this spelling may also represent Berber -ey-, as in aderey'lal, explicitly written with rā' maksūra and yā' sākina.

Arabic loans

Arabic loanwords in medieval Berber largely retain their original spelling. They are borrowed with the Arabic definite article, which is semantically ‘neutralized’. Tā' marbūta is usually replaced with tā':

{p. 368} 

<table>
<thead>
<tr>
<th>ترنيج</th>
<th>etterenț (^ {20}) ‘citron’, Ar. at-turunğ</th>
</tr>
</thead>
<tbody>
<tr>
<td>الميمون</td>
<td>elmeymun                           ‘bryony’, Ar. al-maymūn</td>
</tr>
<tr>
<td>الفصت</td>
<td>elfesșet                           ‘lucerne’, Ar. al-fișsa(t)</td>
</tr>
</tbody>
</table>

In some cases the spelling is changed to reflect Berber pronunciation:

<table>
<thead>
<tr>
<th>الدونييت</th>
<th>edduneyt                           ‘world’, Ar. ad-dunyā</th>
</tr>
</thead>
<tbody>
<tr>
<td>الشيشيت</td>
<td>eššišeyt                           ‘bonnet’, Ar. aš-šäšiya(t)</td>
</tr>
</tbody>
</table>

Notes on phonology and morphology

No full survey of Medieval Berber grammar will be attempted here; only some of

---

18. In modern standard orthography, the hurūf al-madd are always written without sukūn.
19. In the spelling of entry no 5, ameliles, Ibn al-Baitār does not indicate whether the yā' has sukūn. He simply states al-mūn wa-l-lāmdūn minhu maksūra wa-s-sīn muhmala, ‘the mūn and the two lāms have kasra, the sīn is without diacritical points.’
20. Explicitly Berber, explicitly vocalized bi-fath at-tā’ wa-r- rá’.
the more salient features will be pointed out.

(1) The vowel *a* is sometimes (though not regularly) reduced to *e* before the consonant *r*, e.g.: 21

<table>
<thead>
<tr>
<th>Medieval</th>
<th>Tashelhit</th>
</tr>
</thead>
<tbody>
<tr>
<td>تازرت</td>
<td>tazert</td>
</tr>
<tr>
<td>اسغر</td>
<td>asyer</td>
</tr>
<tr>
<td>تامرت</td>
<td>tamert</td>
</tr>
<tr>
<td></td>
<td>tazart 'figs'</td>
</tr>
<tr>
<td></td>
<td>asyar 'wood, bush'</td>
</tr>
<tr>
<td></td>
<td>tamart 'beard'</td>
</tr>
</tbody>
</table>

(2) Plurals with nominal prefixes *u*- and *tu*- occur frequently where corresponding forms in the modern Berber languages have *i*- and *ti*-: 22

<table>
<thead>
<tr>
<th>Medieval</th>
<th>Tashelhit</th>
</tr>
</thead>
<tbody>
<tr>
<td>اوکرمودن</td>
<td>ikrmudn</td>
</tr>
<tr>
<td>توروفین</td>
<td>tirufin</td>
</tr>
<tr>
<td></td>
<td>'leguminous plants'</td>
</tr>
<tr>
<td></td>
<td>'roasted barley'</td>
</tr>
</tbody>
</table>

Tashelhit is in fact the only Berber language for which comparable forms are attested, e.g. *tumzin* 'barley', *timyarin* 'women' (*timzin, timyarin* in other languages).

(3) The forms of the *état d'annexion* of masculine nouns are as follows:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>اجليد</td>
<td>agellid</td>
</tr>
<tr>
<td>وجليد</td>
<td>welgellid</td>
</tr>
<tr>
<td>اسروا</td>
<td>aqru</td>
</tr>
<tr>
<td>وصروا</td>
<td>wezru</td>
</tr>
<tr>
<td>امان</td>
<td>aman</td>
</tr>
<tr>
<td></td>
<td>'king'</td>
</tr>
<tr>
<td></td>
<td>'stone'</td>
</tr>
<tr>
<td></td>
<td>'water'</td>
</tr>
</tbody>
</table>

21. All three forms are attested in more than one source; it is unlikely that they are misspellings or corruptions.
22. Cf. also the ethnonyms *Uguzulen* and *Uyżafen* mentioned above.
<table>
<thead>
<tr>
<th>Berber</th>
<th>Medieval Berber orthography</th>
</tr>
</thead>
<tbody>
<tr>
<td>waman</td>
<td>'head'</td>
</tr>
<tr>
<td>iγef</td>
<td>'fields'</td>
</tr>
<tr>
<td>yeγef</td>
<td>'sea'</td>
</tr>
<tr>
<td>ighran</td>
<td>'jackal'</td>
</tr>
<tr>
<td>yeğran</td>
<td>'wells of the king'</td>
</tr>
<tr>
<td>ilel</td>
<td>'salt of stone'</td>
</tr>
<tr>
<td>yilel</td>
<td>'sack of water'</td>
</tr>
<tr>
<td>uṣṣen</td>
<td>'pain of the head'</td>
</tr>
<tr>
<td>wuṣṣen</td>
<td>'possession of fields'</td>
</tr>
<tr>
<td></td>
<td>'wind of the sea'</td>
</tr>
<tr>
<td></td>
<td>'grape of the jackal'</td>
</tr>
</tbody>
</table>

The construct states with we- and ye- have consistently been transcribed incorrectly in the past, viz. with initial vowels i- or u- (e.g. *ugellid* instead of *wegellid*). The letters ya’ and waw in word-initial position always represent the consonants y- and w-. The vowels i- and u- in word-initial position can only be written with alif followed by ya’ c.q. waw.

(4) The *état d’annexion* is found, among others, in possessive constructions:

<table>
<thead>
<tr>
<th>Berber</th>
<th>Medieval Berber orthography</th>
</tr>
</thead>
<tbody>
<tr>
<td>tunin en wegellid</td>
<td>'wells of the king'</td>
</tr>
<tr>
<td>tisent en wegré</td>
<td>'salt of stone'</td>
</tr>
<tr>
<td>ayeddid en waman</td>
<td>'sack of water'</td>
</tr>
<tr>
<td>angaz en yeγef</td>
<td>'pain of the head'</td>
</tr>
<tr>
<td>tuwedfa en yeğran</td>
<td>'possession of fields'</td>
</tr>
<tr>
<td>adu en yilel</td>
<td>'wind of the sea'</td>
</tr>
<tr>
<td>adil en wuṣṣen</td>
<td>'grape of the jackal'</td>
</tr>
</tbody>
</table>

Other examples include:

<table>
<thead>
<tr>
<th>Berber</th>
<th>Medieval Berber orthography</th>
</tr>
</thead>
<tbody>
<tr>
<td>igher en wesennan</td>
<td>'field of thorns'</td>
</tr>
</tbody>
</table>
In many possessive constructions, the preposition en ‘of’ is omitted, while the possessor remains in the état d’annexion:

The elimination of the nominal prefix leads one step further toward compound nouns:

Some examples of compounds are:

23. Amsoun or Msoun is the name of a valley located north-west of Taza where the plant which bears this name (a variety of dodder) is said to grow.
Medieval Berber orthography

Medieval Berber orthography

(5) In personal names, Arabic (a)bū ‘father of, he who has’ and ibn ‘son of’ may be followed by a Berber noun in the état d’annexion:

\[
\begin{array}{ll}
\text{Bo Wugiyl} & \text{Bu Weyyl} \\
\text{Abu Yinikef} & \text{Abū Yenikef} \\
\text{Bn Woloon} & \text{Ibn Welwun} \\
\text{Bn Wmgar} & \text{Ibn Wemyar}
\end{array}
\]

‘he with the donkey’
‘father of Hedgehog’
‘son of Ram’
‘son of the Chief’

Arabic ibn is also used in the sense ‘native of’:

\[
\begin{array}{ll}
\text{Bn W杰dr} & \text{Ibn Wegadir} \\
\text{Bn Wndlus} & \text{Ibn Wendelus}
\end{array}
\]

‘native of Agadir’
‘native of (al-)Andalus’

Concluding remarks

An important question which has not been addressed thus far is: Which variety of Berber is, or which varieties are recorded in the medieval sources? Some brief remarks may be made here.

The more substantial sources record a variety of Berber which is most closely related to modern Tashelhit, as appears from a comparison of lexicon and morphology. These sources are: Ibn Tunart’s Kitāb al-Asmā’, the Leiden Fragment, the Kitāb al-Ansāb and the memoirs of al-Baidhaq. These sources also share some special features (e.g. reduction of a to e before r, schwa in open syllables, plurals with prefixes u-, tu-) which show that they all record the same variety of Berber. ‘Old Tashelhit’ may be an appropriate name for this language.

The most striking fact concerning the pharmacological manuals is that the {p. 371} majority of them were written in al-Andalus (az-Zahrāwī, Ibn Bekläresh, Ibn ‘Abdün), or by writers of Andalusian birth working in the Middle East (Maimo-

26. Litt. ‘river tree’: *asyr* ‘bush, tree’ and *asif* ‘river’.
27. Cf. Ibn Tunart alwun ‘ram’ (Arabic *kabs*).
28. This point is elaborated in van den Boogert, 1998, p. 12.
nides, Ibn al-Baiṭār). It is likely that a substantial body of speakers of a variety of Berber akin to Tashelhit lived in al-Andalus, and that al-Andalus is the place where this language was first committed to writing.²⁹ That there were indeed Berbers in Spain who spoke a Tashelhit-like language is shown by the fact that at the end of the 15th century, as a consequence of the reconquista, a group or groups of berberophones are known to have migrated from Spain to the Sous in southern Morocco, where they became known as the ‘people of the ship’ (ayt uyrrabu). One of them is Saʿīd al-Kurramî (Ṣeīd Akʿīramu, d. 882/1477-8), who is reputed to be the last surviving Berber scholar who had received his schooling in Granada.³⁰ The Andalusian Arabic loanwords which are still found in Tashelhit, such as lmri ‘mirror’, lkīyḏ ‘paper’, līxrt ‘hereafter’, šīṣīt ‘bonnet’, etc., also point to a connection between Tashelhit and al-Andalus.³¹

It is noteworthy that in the Kitāb al-Ansāb and the memoirs of al-Baidhaq, who was certainly born in the South of Morocco, the Berber phrases are repeatedly said to be ‘in the language of the Gharb’ (lisān al-γarb). The coastal area in Morocco which is known as the West (al-γarb) is now inhabited by arabophones. The berberophone Ghomara, in northern Morocco, may be an isolated remnant of the original Berber language spoken in this area.³²

The botanist ‘Abdallāh ibn Śāliḥ al-Kutāmī belonged to the Kutāma or Ikʿtamen tribe. Members of this tribe had settled in various parts of North-Africa and al-Andalus.³³ Al-Kutāmī had a druggist’s shop in Marrakech. He was one of the teachers of Ibn al-Baiṭār (cf. Ullmann, 1970, p. 279).

Ibn al-Ḥassāḥ may have spoken a Tashelhit-like Berber language, as he worked in the service of the first sultan of the Ḥafṣid dynasty of Tunisia (cf. Ullmann, 1970, p. 236). The Ḥafṣids were the descendants of Abū Ḥafṣ ‘Umar (a.k.a. ‘Umar Intī, d. 571/1176), a Berber of the South Moroccan Hantāta tribe and one of the close companions of Ibn Tumert.

³¹. Standard Arabic ā often changed to ī in Andalusian colloquial Arabic; compare the standard forms al-miʿrā(t), al-kāyīd, al-ʿaxira(t), as-šāšīya(t). Pedro de Alcalá actually mentions the forms mirī ‘mirror’ and xīxīa ‘bonnet’. See also van den Boogert, 1998, p. 195.
³². The present-day Ghomara claim that they are related to the Chleuh, the speakers of Tashelhit (cf. Colin, 1929).
Medieval Berber orthography

The gradual expulsion of the Muslims from Spain in the course of the 15th century probably put an end to Old Tashelhit as a written language. A century or so later, (pre-)modern Tashelhit emerged as a literary language, in the garb of a different, newly devised orthography.\(^{34}\)

There are also medieval sources which record a variety of Berber which is clearly not closely related to Tashelhit. In fact, the oldest examples of Berber in Arabic script known to the present author are the plant names which are found in the *Kitāb al-I'timād*, a pharmacological manual compiled in the second half of the 10th c. A.D. by Ibn al-Jazzār (d. 369/980 or 395/1004). The names are:

\[
\begin{align*}
\text{تنيكيروتان} & \quad \text{tigirutan} & \quad \text{‘dittany’} \quad \text{(p. 372)} \\
\text{التشتيوان} & \quad \text{(at-) teshīwan} & \quad \text{‘polypody’} \\
\text{التانكدست} & \quad \text{(at-) tag*endest} & \quad \text{‘pellitory’} \\
\text{التاكوت} & \quad \text{(at-) takkewt} & \quad \text{‘Euphorbia resinifera’} \\
\text{التانغوت} & \quad \text{(at-) taneyut} & \quad \text{‘Euphorbia pithyusa’} \\
\text{التانغيت} & \quad \text{(at-) taneyit} & \quad \text{‘id.’} \\
\text{التانفروت} & \quad \text{(at-) tafrut} & \quad \text{‘iris’}
\end{align*}
\]

All of these names except one are written with the Arabic definite article. Note the plural ending -\textit{an} with feminine nouns, which is only attested in the language of the Ghomara.\(^{35}\) Ibn al-Jazzār lived and worked in Kairouan in Tunisia; of his ethnic background nothing is known.

The use at this early date of the letter kāf to represent the Berber consonant \(g\) in \textit{tigirutan} may be an indication that stage 1 in the development of the Berber orthography is to be dated to even earlier time, possibly in the 9th or even 8th century A.D.

Among the sources that were not examined for this article there are some in which eastern varieties of Berber are recorded. These include the Berber passages in

\(^{34}\) The oldest preserved text in the ‘new’ orthography is the ‘\textit{Aqā’id ad-Dīn} by Ibrāhīm ibn ‘Abdallāh as-Ṣanḥājī (a.k.a. Brahim Aznag, d. 1005/1597). See van den Boogert, 1997, chapter 5.

\(^{35}\) Cf. also the name of Tétouan, litt. ‘the wells’ (*Tittawin* تيطاوين in the memoirs of al-Baidhaq).
Ibadite scriptures (cf. Lewicki, 1934 and Ould-Braham, 1988), the ‘manuscript of Zuwāra’ (cf. Motylinski, 1907) and the abundant onomastic materials in the works of Ibn Khaldūn. These eastern materials are written in an orthography which is clearly based on the same principles as the orthography of the far West. Further study of the available materials will be necessary before we can determine where and when the medieval Berber orthography originated.
Alphabetical list of quoted medieval Berber forms {p. 372-4}

Only the reference to the source from which a particular form is quoted in this list. Many of the plant names are found in more than one source. The letter γ is placed after g in the alphabetical order.

Abdun  Ibn ʿAbdūn, ʿUmdat al-Ṭabīb, ed. al-Khaṭṭāḥī, 1996 (Beirut)
Ansab  Anon., Kitāb al-Ansāb, ed. Lévi-Provençal, 1928
Bakri  al-Bakrī, Kitāb al-Maṭālik wa-t-Masālik, ed. de Slane, 1857
Baidhaq  al-Baidhaq, memoirs, ed. Lévi-Provençal, 1928
Baitar  Ibn al-Baiṭār, al-Jāmiʿ, tr. Leclerc, 1877-1883
Hassha  Ibn al-Ḥassḥāʾ, Muḥd al-ʿUlūm, ed. Colin & Renaud, 1941
Jazzar  Ibn al-Jazzār, Kitāb al-Iʿtimād, facsimile, 1985
Kutami  al-Kutāmī, commentary on Dioscurides, ed. Dietrich, 1988
Maimonides  Maimonides, Sharḥ Asmaʾ al-ʿUqqār, ed. Meyerhof, 1940
Tadili  at-Tādīlī, at-Tashawwuf, ed. Faure, 1958
Tuhfa  Anon., Tuhfat al-Aḥbab, ed. Renaud & Colin, 1934
Tunart  Ibn Tunart, Kitāb al-Asmāʾ, Leiden ms. Or. 23.333 (Lq) and Or. 23.348 (La)

Abu Wezreg, Ansab p. 29  alezzzaz, Hassha no 600
Abū Yenilef, Tadili p. 218 aṭtīli, Kutami IV 72
addad, Baitar no 27  aḥwūn, Tunart La 10r°
aderyis, Tunart Lq 23v°  a ṣ a n y e s i d a n, Bakri p. 156
ad nam, Kutami I 62  a n e k r a z, Tunart Lq 20v°
adrar, Tunart 23r°  a m e l i l e s, Baitar no 5
aḍar eylal, Tunart La 14v°  a m e z g u r, Abdun no 872
aḍereylal, Baitar no 2  a m r a d, Tuhfa no 204
aḍiḍ en wuṣšen, Tunart La 14v°  a n a z q, Tunart La 13r°
aḍu en yiel, Tunart La 15v°  a n g a ḵ e n y e f, Tunart Lq 14r°
aḍuṇaẓir, Kutami IV 83  a n e l k u ḵ, Tunart La 14v°
afersiw, Tuhfa no 366  a n g a ḵ e f, Tunart La 13r°
agešṣrū, Baitar no 6  a n lī, Abdun no 219
ageṭṭum, Tunart La 13v°  a r m a s, Abdun no 1802
aɣaẓ, Tunart Lq 23r°  a r g a n, Baitar no 56 (with ǧūm)
akʷitar, Baitar no 3 (double initial ʾalif)  a r g a n, Baitar no 1145 (with qāf)
akʷitar, Kutami IV 91 (single initial ʾalif)  a r g a n, Tunart La 13r° (with kāf)
aryis, Baitar no 4
asasnu, Kutami I 98
asyer yevezd, Kutami III 91
asyersif, Kutami I 73
asyer yefer, Baitar no 1604
astili, Kutami III 56
awseryint, Kutami IV 7
ayeddid en waman, Tunart Lq 16v°
ayerni, Kutami II 149
Ayet Wersaneu, Ansab p. 44
azeqgig, Tunart Lq 24v°
azenzu, Tuhfa no 206
azequur, Tunart La 13v°
azar, Baitar no 61
açuka, Tunart Lq 23r°
Bâ Weyyul, Baidhaq p. 124
edduniyt, Ansab p. 40
efsu, Tunart La 11r°
elfesset, Tunart Lq 24v°
elmeynun, Baitar no 1655
ennes, Tunart passim
esšišeyt, Tunart La 12v°
etereinž, Abdun no 22
Guzila, Ansab p. 43
ibawen, Abdun no 1982
ibn Wegadir, Tadili p. 460
ibn Welwun, Tadili p. 164
ibn Wemyar, Ansab p. 29
ibn Wendelus, Tadili p.348
idgel, Tunart Lq 23r°
Ifestalen, Ansab p. 45
iger en wesennan, Baidhaq p. 78
izrey, Tunart Lq 23v°
ikiher, Tunart La 14r°
imi en tegenni, Baidhaq p. 120
irden, Tunart La 6v°
isidan, Tunart Lq 11r°
izrey, Kutami III 24
izž, Abdun no 1584
tabezjurit en tili, Kutami II 108
taferežižt, Kutami IV 167
tafrut, Jazzar p. 55
tafrut wüșen, Kutami IV 20
tag¬enest, Jazzar p. 147
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