

# The peopling of the Canaries: new data and new hypotheses



**[CIRCULATION DRAFT]**

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## **ACRONYMS AND CONVENTIONS**

*	regular reconstruction
BCE	Before Common Era
BP	Before present
ONA	Old North African

## **ABSTRACT**

Although the Canary Archipelago was known to classical authors, the date and manner of its peopling remains highly controversial. Remarkably, when the first maritime explorations from the Mediterranean reach the islands, they were still in the Neolithic. Despite extensive evidence for contact, metal technology was never transferred. Even more remarkably, the inhabitants, the Guanche, had no seagoing tradition, despite the evidence for inter-island cultural transfers. A lack of radiocarbon dates has meant that the chronology of the settlement of the Canaries has remained controversial, with wild guesses circulating in the literature. The genocide of the Guanche in the eighteenth century remains an unacknowledged moral stain on European colonial traditions.

The paper reviews the classical accounts, and the records of first contact from 1312 onwards. Linguistics points strongly to a connection with the Berbers of the Maghreb, although the extermination of the inhabitants before their language was properly recorded, makes this uncertain. Some types of cultural evidence, such as the granaries with door locks on Gran Canaria, point to Berber contact. However, other practices, such as mummification, log-coffins, body stamps and terracotta images of deities seem highly idiosyncratic. Although the Guanche practised minimalist agriculture from ca. 300 AD onwards, with barley, wheat, goats, sheep and pigs, some islands had reverted to foraging by the medieval era. Recent aDNA work has confirmed the North African connection but the results remain frustratingly unspecific.

## **1. Introduction**

The Canary archipelago consists of seven major islands and a handful of islets, some 100 km west of Morocco. They were settled at a still-disputed date, but presumed to be more than two millennia ago. The core population were the Guanche people, with four dialects, spread across seven main islands. They were known to classical authors, and also accorded semi-mythological status as the Garden of the Hesperides, or the *Islae Fortunatae*, the ‘fortunate isles’. The Canaries were apparently visited by numerous maritime peoples, including the Phoenicians, Romans and Arabs, but these early sources have nothing to say about their presumed inhabitants.

By the fourteenth century contact with European maritime nations had begun, principally with the Mallorcans and Genoese. External settlement seems to have begun in the early fourteenth century on Tenerife and the process of conversion, assimilation and elimination began. Europeans found the local dances so entrancing that these were carried back to Europe and entered the repertoire of classical music, hence the *canaries* in the harpsichord suites of J.S. Bach. Unfortunately, the fate of the language and people was less iconic, as by the end of the eighteenth century they had disappeared, with the speakers killed, dying from disease or being assimilated. There is little doubt that the indigenous Guanche populations were affiliated to the Berbers of North Africa. What remains of their language shows clear Berber cognates, while inscriptions on the islands can be related to Numidian epigraphy. DNA evidence links modern Canarians to North Africans (Maca-Meyer *et al.* 2003).

Table 1 shows the modern names of the Canary Islands, together with the Guanche names for the individual islands and their inhabitants, together with Latin names.

**Table 1. Indigenous and Roman names for the Canary Islands**

<b>Modern name</b>	<b>Guanche</b>	<b>Inhabitants</b>	<b>Roman name(s)</b>
Tenerife	Guanchinet	Chinet	Ninguaria or Nivaria
Gran Canaria	Canaria	Canarii	Canaria
Lanzarote	Tyterogaka	Maxo	Pluvialia or Invale
La Palma	?	Auaritas	Ombrion
Fuerteventura	Erbania	Maxorero, Maxo	Planasia
El Hierro	Esero [?]	Bimbaches	Iunonia or Junonia
La Gomera	?	Gomeros	Capraria

Map 1 shows the modern Canary Islands.

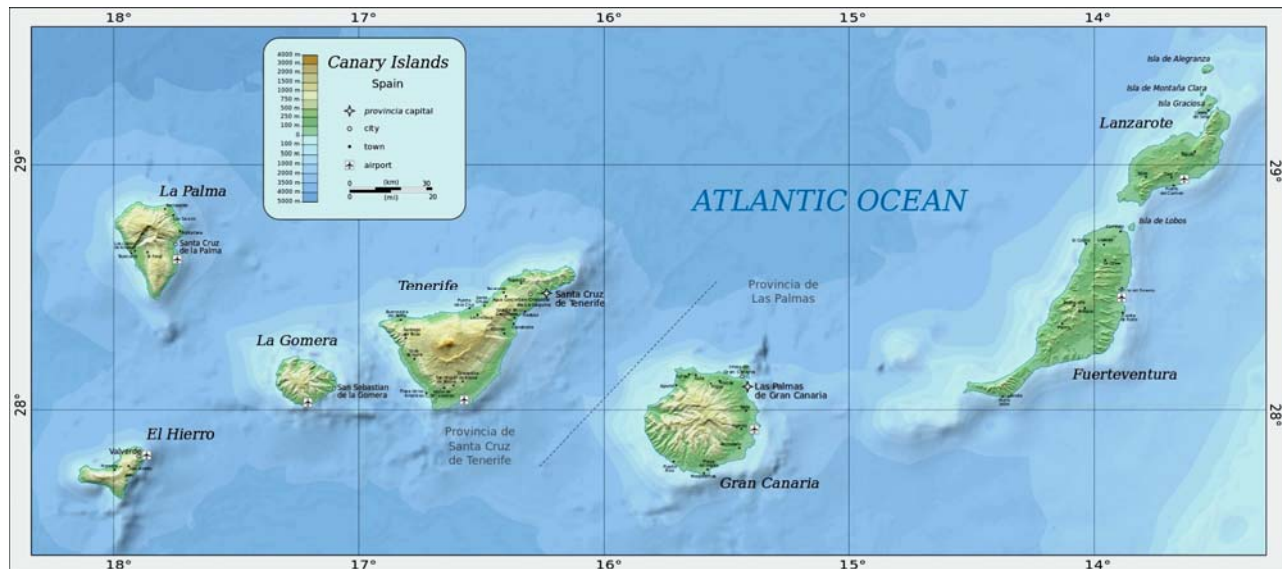
However, there are many perplexing aspects of the culture of the Canaries. Unlike the nearby mainland, they remained in the Neolithic until medieval times. Despite the presence of many shared cultural practices on all seven islands, such as agriculture, livestock production and ceramics, they had no maritime capacity. Their material culture shows some strong parallels with mainland Berber culture, while other aspects appear to be entirely idiosyncratic. When the Guanche arrived, they must have had the package of cereal crops and livestock, because the Canaries are too faunally depauperate to support a foraging lifestyle. They had two traditions of written script, attested on rock engravings.

This paper<sup>1</sup> is a synthesis of recent findings, bringing archaeological and linguistic data with more recent palaeo-environmental and aDNA results. It proposes a model for the peopling of the Canaries, which plausibly accounts for our present understanding. Nonetheless, the lack of radiocarbon and other reliable dates needs to be underscored; until we have a suite of direct dates for the different islands, defining a more precise scenario is not possible.

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<sup>1</sup> This paper represents the fruition of years of discussion with scholars from a variety of different disciplines. Particular thanks to Maarten Kossmann and Jacob Morales for unpublished data and critiques.

## Map 1. The Canary Islands



Source: CC

## 2. Early descriptions and possible visits

The Canaries were clearly known to early mariners in the Mediterranean. The first clear reference to them is in the *Periplus of Hanno*, a Carthaginian voyage summarised in later synopses, including Herodotos. A Greek sailors' manual of a few centuries later, the *Pseudo-Scylax*, also notes their existence. Neither of these sources clearly indicate whether they encountered any resident indigenes. However, Pliny the Elder (AD 79) recounts the voyage of Juba II, a Numidian ruler, to the Canaries in the first decades of the 1<sup>st</sup> century, which was explicitly connected with the establishment of dye production in Western Morocco. Juba reported finding large buildings but did not encounter any inhabitants. From this period, the Latin names of the Canaries are given in classical sources. There is also a record of a Muslim trader from Granada, Ibn Farrukh, reaching Gando (Gran Canaria) in 999 AD. Table 2 summarises these early records.

**Table 2. Early voyages with references to the Canaries**

Voyage	Date	Source
Hanno	6-5 <sup>th</sup> century BC	Carpenter (1966)
Pseudo-Scylax	330 BC	Shipley (2011)
Juba II	ca. 40 AD	Pliny the Elder (79 AD)
Ibn Farrukh	999 AD	De Galindo & Glas (1767)

Archaeological evidence from shipwrecks (§3) shows that Roman voyages were more common than this sparse record suggests, but even so, no permanent outposts were ever established on the Canaries.

The isolation of the Canaries came to an end when the Genoan navigator, Lancelotto Malocello, settled on the island of Lanzarote in 1312. He eventually left but by this time the existence of the islands was no longer a secret and from 1350, a mission was established to convert the native populations. The first account of the Guanche language was by the Genoese mariner, Nicoloso da Recco, in 1341, who transcribed the lower numerals. The Castilian conquest of the Canary Islands began in 1402, when Jean de Béthencourt and Gadifer de la Salle landed on the island of Lanzarote<sup>2</sup>. An illustrated chronicle records the conquest of the Guanche and their forcible conversion to Christianity<sup>3</sup>.

<sup>2</sup> A beautiful facsimile of this manuscript has been published (Pico *et al.* 2005)

<sup>3</sup> The Guanche mobilised and fought back in the two battles of Acentejo (1494, 1496), but their lack of metal and weapons other than isolation meant they were destined to be defeated.

From this date onwards, the destruction of the Guanche culture proceeded rapidly, and by the mid-eighteenth century, it had effectively disappeared. The Canaries became a major transit point for trade to the New World, and for a period it was flooded with both merchants and settlers, making the claims of indigenous peoples irrelevant to this new commercial prominence. Unfortunately, this was too early for modern linguistic and ethnographic research techniques and so much of our information concerning the Guanche are only amateur records.

### **3. Existing archaeological resources**

If Hanno or other Phoenicians reached the Canaries, they left no archaeological trace. How and when the ancestors of the Guanche reached the islands remains disputed. Evidence for contact consists of Roman amphorae discovered in waters off Lanzarote in 1964 (Photo 1). Excavations in the 1990s of a settlement at El Bebedero on Lanzarote, made by a team under Pablo Atoche Peña of the University of Las Palmas de Gran Canaria and Juan Ángel Paz Peralta of the University of Zaragoza, yielded Roman potsherds, nine pieces of metal and one piece of glass, dated to between the 1st and 4th centuries (Criado & Peña 2003).

Excavations of the indigenous Guanche settlements have been numerous, beginning with the opening of the tumuli fields in the nineteenth century by amateurs seeking treasure and later, skeletal material and mummies. The major museum collections are held in the *Museo Canario* on Gran Canaria and in the *Museo de la Naturaleza y el Hombre* in Tenerife. These illustrate a number of features of pre-colonisation Guanche culture, which can be summarised as follows;

**Photo 1. Roman amphora from shipwreck**



Source: Author photo, Museo Canario  
*Museo de la Naturaleza y el Hombre* in Tenerife.

- a) A complete lack of metal artefacts, both copper and iron, despite these being well-established on the mainland opposite
- b) A thriving and highly diverse stone culture, with considerable variation from one island to another, including rotary grain mills, such as those in use in the Maghreb
- c) Pastoral livestock production, including pigs, sheep, goats and dogs but no cattle, established on all seven islands
- d) Agriculture, principally barley, wheat, pulses and figs, practised on five of the seven islands
- e) No evidence for a maritime culture to transport individuals between islands and conduct offshore fisheries
- f) A complex culture of ceramic production with strikingly diverse traditions on different islands
- g) Manufacture of 'idols', i.e. anthropomorphic representations of figures used in religious practice, with no trace of influence from mainland iconographic practice
- h) Mummification of corpses practised on two islands
- i) Rock inscriptions in a script resembling Numidian in the Maghreb and a second stratum of inscriptions created by writers familiar with Latin orthographic practice
- j) No evidence for permanent settlements of other trading cultures
- k) Despite rich marine resources, little evidence for a thriving capture fisheries

The archaeology is characterised by a common lacuna, namely a lack of trustworthy radiocarbon dates. Dates cited in popular and quasi-academic writings are merely guesswork and should not be cited. The



oldest direct dates are those associated with the archaeobotanical finds and these are as late as 300 AD (Morales 2010, 2017) which do not reflect earlier settlement<sup>4</sup>.

#### **4. Palaeo-environmental evidence**

##### **4.1 Pollen and charcoal**

In the absence of direct dates for settlement, fossil pollen and charcoal analysis can capture the impact of human colonisation. De Nascimento et al. (2016) provide the first results from the island of Gran Canaria. The pollen record obtained from Laguna de Valleseco (870 m asl) spans the late Holocene (c. 4500–1500 cal. BP). During the earliest period, pollen composition resembles contemporary thermophilous communities, with palms (*Phoenix canariensis*) and junipers (*Juniperus* cf. *turbinata*) dominant. Vegetation in Valleseco began to change at around 2300 cal. BP, centuries before the earliest archaeological evidence of human presence in the island. The data shows an increased frequency of fires at that time, coinciding with the decline of palms and the increase of grasses, indicating human presence and vegetation transformation. Gran Canaria's forest decline began early in the prehistoric occupation of the island. In the following centuries, there were no signs of forest recovery. Pollen from cultivated cereals became significant by 1800 cal. BP, implying the introduction of agriculture. The next shift in vegetation (c. 1600 cal. BP) involved the decrease of grasses in favour of shrubs and trees like *Morella faya*, suggesting that agriculture was abandoned.

##### **4.2 Faunal extinctions**

The endemic fauna of the Canaries was extremely depauperate, consisting mainly of rodents. The Gran Canaria giant rat, *Canariomys tamarani*, is considered to have gone extinct before European colonisation, probably due to the introduction of cats. Similarly, the Tenerife giant rat, *Canariomys bravori* (Photo 2), seems to have been an anthropic extinction (Michaux et al. 1966). The extinct Lava mouse, *Malpaisomys insularis*, is known from Holocene and Pleistocene deposits in the eastern Canary Islands, including Fuerteventura, Lanzarote and nearby islets (Boye et al. 1992). Two lizard species that inhabited Tenerife and La Gomera are possibly extinct (*Lacerta goliath* and *Lacerta maxima*), as is the giant lizard of Roque Chico and of El Hierro (*Gallotia simonyi simonyi*). This suggests that without livestock, subsistence on the Canaries was impossible, due to lack of huntable animals, and that the arrival of the Guanche, together with dogs and habitat conversion, rapidly extinguished the few endemic mammals.

**Photo 2. Tenerife giant rat, *Canariomys bravori***



Source: Museo de la naturaleza y el hombre, Tenerife

#### **5. The transition to livestock production and agriculture**

The timing of the transition to agriculture in North Africa remains controversial. The paucity of stratified sites with unambiguous macro-remains of cultivated plants suggested to an earlier generation of researchers that the production systems were largely foraging and pastoral (e.g. Barker 2006). Evidence from Moroccan sites now suggests significant patches of early agriculture, but these show strong relationships with the Iberian peninsula. Kaf Taht El-Ghar in Northern Morocco has yielded remains of several types of wheat, naked barley and broad bean (*Vicia faba*) dated to  $7286 \pm 85$  cal BP (Ballouche & Marínval 2003). The site of Ifri Oudadane, also in Morocco, has barley, three wheat subtypes, pea and lentil, dated broadly to the Early Neolithic B, 7000–7500 BP (Morales et al. 2013; Zapata et al. 2013). So far, these data suggest that the Ifri Oudadane materials are the oldest cultivated plant remains not only from North Africa but from the entire African continent. However, this may be misleading, since in all sites, there is an apparent return to foraging and/or livestock production. A new wave of evidence for agriculture only occurs in Morocco by around 500 BC, possibly again re-introduced by sea, probably by the Phoenicians. Certainly in Lybia and Tunisia, dates for agriculture are similarly late, perhaps around 300 BC. The evidence is that agriculture only reaches the Canaries relatively late, by around 300 AD (Morales 2010; Morales et al. 2017). The pollen evidence (§4.1) indicates a date of perhaps 200 AD, but these dates remain sparsely supported and are for

<sup>4</sup> Jacob Morales informs me has recently applied for a grant to conduct a major exercise in radiocarbon dating.

one island. The most plausible scenario is that the first settlers brought livestock with them and began to clear forests to support grazing, and that agriculture was introduced with a second wave of settlement.

## **6. The evidence for subsistence strategies**

### **6.1 Domestic animals**

The domestic animals on the Canaries were pigs, dogs, goats and sheep. There were no cattle or other working animals. Cattle and the plough were introduced in the post-Hispanic era. This suggests that the earliest settlers were related to the pastoral societies of the Maghreb, who kept this ensemble of species prior to the Roman invasion. The ruminants were milked, and one of the more surprising archaeological finds are jars of preserved butter, *mantica*, which were recorded on Fuerteventura (Photo 5). The name for this butter in Guanche, *oche*, seems to reflect Berber terms directly. Pastoralism seems to have been the default mode of subsistence, as there is evidence that even where it is apparent that crops were known, based on the archaeological record, the inhabitants had reverted to livestock-keeping at the time of European contact, for example on La Gomera.

### **6.2 Beekeeping**

Beekeeping is found on all islands of the Canaries and is almost certainly pre-Hispanic. The idiosyncratic beehives are made either of stone or the trunk of the palm, *Phoenix canariensis* (Photo 3). The bee they are associated with is a black variant of the honeybee, *Apis mellifera*, which is under threat from Mediterranean variants imported in recent centuries.

**Photo 3. Beehives at Aterea, Gran Canaria**



Source: Author photo

### **6.3 Agriculture**

Agriculture was known on all the seven islands of the Canaries (Morales *et al.* 2017), but by the time of early European contact, it had been abandoned on two of them, La Gomera and Hierro, where the inhabitants had reverted to pastoralism. The earliest evidence for cultivated crops is ca. 300 AD at La Tendal on La Palma (Morales *et al.* 2017), with the remains of wheat (*Triticum durum* or *aestivum*) and barley (*Hordeum vulgare*). Apart from the cereals, there is evidence for lentils (*Lens culinaris*), pea (*Pisum sativum*) and fava bean (*Vicia faba*). The pulses are all quite late, from around the 14<sup>th</sup> century onwards and occur within the window of early or possible European contact. The fig, which can be treated as semi-domestic, was present from the earliest period of crop agriculture.

### **6.4 Fishing and aquatic resources**

The Canaries are surrounded by the rich Atlantic Ocean, so it might be thought fisheries was one of the main subsistence strategies of the Guanche. However, the absence of boats of any type, and the lack of fisheries technologies suggests that this was not the case. This may have been due to their pastoral heritage; across the world it is common for pastoralists to eschew marine resources, for example along the coast of the Horn of Africa. A couple of bone fish-hooks from an undated context have been reported from Gran Canaria (Photo 4) and they are also reported from Tenerife, but these seem to be the exception. Given the other indications of transfer of fisheries capture techniques from early Iberian contact, it is possible these are a late innovation. Fish-bones are generally not reported from archaeozoological contexts. The list of terms for individual fish recorded in Wölfel (2003) invariably turn out to be borrowings from Spanish or Portuguese. Shell-middens are common by contrast, and collection of edible shells from the seashore is attested on most islands.

**Photo 4. Bone fish-hooks, Gran Canaria**



Source: Author Photo, Museo Canario

### **6.5 Dye-shell collection**

A key product much sought in the ancient Mediterranean was the murex and other shells which produced a distinctive purple dye, much used in production of clothes for the elites. The exploitation of dye-shells may



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go back in the historical record to as much as 2700 BC (Bruin 1970). Certainly it is a well-documented trade. Pliny (AD 79) records the Canaries as one of the sites where dye-shells were collected, and we know the Phoenicians were actively involved in this trade.

## 7. The link with Berber

### 7.1 Guanche records and Berber

The records of Guanche are only those recorded by travellers and amateur enthusiasts and use wayward orthographic conventions. The classic synthesis, Wölfel (1965, 2003) collects together all the records sorted by semantic field, and notes many similarities with Berber. Most researchers who have looked at the records of Guanche have agreed (e.g. Galand 1987/88). Moreover, the very short inscriptions on rock in the Canaries which are in the old North African Numidian script further confirm the Berber link. As it turns out, recorded Guanche names for food plants, including barley and wheat, are neatly linked to mainland Berber terms, suggesting agreement between the linguistic and archaeobotanical record.

The Berber languages constitute a major branch of the Afroasiatic language phylum and are spoken both by settled and nomadic populations along the North African coast and far down into the Sahara, presently reaching the borders of Nigeria. Today, Berber languages are confined to a series of islands surrounded largely by Arabic (Map 2). This is a considerable geographical range, but it has been regularly argued that Berber culture and by implication, people, reached as far as the Nile Confluence (e.g. Behrens 1989). Nonetheless, Berber must once have been the dominant population throughout much of North Africa and the Sahara in the past (Brett & Fentress 1996; Blench 2001). Although the Tuareg are presently the most widespread group, found across much of Algeria, Niger and southern Libya, their expansion is probably relatively recent as they may have entered the south-central Sahara as late as the 6<sup>th</sup> century AD (Camps 1974).

Map 2. Present distribution of Berber



Despite an abundance of information, there are a series of major unanswered questions about the affiliations, origins and date of diversification of the Berber languages (Galand 1970-1). Berber is Afroasiatic, and its nearest relative is likely to be Semitic. Yet when deep-level Arabic borrowings are weeded out, the corpus of established Afroasiatic roots is very small, pointing to a 'long tail', a split from the main branch at quite some time-depth. When and where this took place is highly uncertain. Similarly, the dates of the primary expansion of Berber are problematic; its extremely low internal diversity points either to a recent epoch or to an episode of language levelling. Neo-Punic and Latin borrowings suggests a late date for proto-Berber of 100-200 AD.

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If this is so, then there is a problem about the Berber affiliation of Guanche, if indeed the first settlers landed in the Canaries around 300 BC. Their language would have originally been drawn from pre-Berber, the pool of languages which underwent levelling around 100 AD. Or even more intriguing, is the possibility that the first wave of settlers spoke another, unrelated language, here called ‘Old North African’. It has long been speculated that the languages of pre-Berber North Africa were related to the languages of the Iberian Peninsula, including Tartessian and possibly Basque. This might well explain the words in Guanche which appear to have no obvious Berber etymology, and those few lexical items Wölfel compares to Basque.

### 7.2 Epigraphy and rock inscriptions

One of the most surprising aspects of the Canaries archaeology is the presence of rock inscriptions in five of the seven islands (Vycichl 2003). Only Gomera and Tenerife lack engraved epigraphy. The basic alphabet is the Libyco-Berber or Numidian script which occurs across the Maghreb. Although the first inscriptions occur in the 3<sup>rd</sup> century BC and continue through to the 3<sup>rd</sup> century AD, almost all texts are disappointingly short, hence the limited contribution of epigraphy to Berber history (Le Quellec 2011). Vycichl points out that the epigraphy of the Canaries can be divided into two phases, an early style which is hard to decipher but which shows parallels with the inscriptions in Morocco, and a later phase, which shows familiarity with Latin script.

### 7.3 Berber relexification of Old North African?

Whether there was another language used at first in the Canaries, many Guanche words can be compared to Berber, including the numerals and most of those related to subsistence (§7). Similarly, agriculture appears to be introduced later than first settlement (§4.1). Could it be that the first population transported to the Canaries were non-Berbers, and that a second wave brought new script practices, agriculture and overwrote or relexified much of the original language with Berber?

## 8. Evidence from crop and animal names

### 8.1 Cereals

The cereals which can be clearly reconstructed for proto-Berber are barley, wheat and (more surprisingly) bulrush millet. Barley (*Hordeum vulgare* subsp. *vulgare*) is one of the oldest domestic cereals and may have been domesticated as early as 8500 BP in the Near East. Jones *et al.* (2013) argue for a Western Asian origin and multiple introductions in Europe. Remains of domestic barley are found in Egypt dated to earlier than 8000 BP (Germer 1985: 208). Six-row hulled barley is common all across North Africa, reaching Gran Canaria by the third century AD, and is the most frequent cultigen recorded at all sites (Morales *et al.* 2017). The Berber names for barley are extremely uniform and may have been transferred from wild barley (Table 3) although Middle Egyptian *šma*, barley, is conceivably related to the Berber term.

**Table 3. Berber names for barley**

Language	Attestation
Central Morocco	timẓin
Beni Snous	timẓin
Djebel Nefusa	təmẓín
El-Fogaha	túmẓin
Senhadja	timẓin
Kabyle	timẓin
Ntifa	timẓin
Mzab	timẓin
Ghadames	təmẓén
Awjila	təmẓín
Siwa	tumẓen
Ouargla	timẓin
Guanche (all islands)	tamozen
Guanche, Hierro	tezzezes

Durum wheat, *Triticum turgidum* subsp. *durum*, was developed from einkorn wheat around 9000 BP in the Near East. However, it seems to have reached Egypt relatively late, being only recorded in the Ptolemaic period (Germer 1985: 212). It arrived in Gran Canaria around 300 AD, together with barley (Morales *et al.* 2017). Berber terms for wheat are also remarkably consistent (Table 4) pointing to a familiarity with the crop from the earliest period of Berber expansion.

**Table 4. Berber names for durum wheat**

Language	Attestation	Comment
Central Morocco	irdən	
Beni Snous	irdən	
Djebel Nefusa	yərdən	
El-Fogaha	yərdən	
Senhadja	irdən	
Kabyle	irdən	
Mzab	irdən	
Ntifa	irdən	
Ghadames	yərdən	
Awjila	irdən, yərdən	
Siwa	irdən	
Tarifit	iaḍən	
Iznasen	irdən	
Guanche, Tenerife	irichen	

There are some additional rare words for processed barley which also occur in Guanche and Berber, including *ahoren* (Guanche Tenerife) and Berber for barley flour, discussed in Kossmann (1999: 92). Table 5 shows the Berber names for barley flour in comparison with the Guanche term.

**Table 5. Berber names for barley flour**

Language	Attestation	Comment
Beni Snous	aren	<i>fine semoule</i>
Chaouia	aren	<i>farine, pollen</i>
Iznasen	aren	<i>farine</i>
Rif	arn	<i>farine</i>
Kabyle	awren	<i>farine</i>
Chleuh	awweren	<i>farine</i>
Mzab	aren	<i>farine</i>
Figuig	aren	<i>farine</i>
Ghadames	aḃārn	<i>farine</i>
Awjila	(a)ḃrun	<i>farine</i>
Middle Atlas	awern, agg'ern	<i>farine</i>
Middle Atlas	arn	<i>farine</i>
Metmata	aren	<i>fine semoule</i>
El Foqaha	aren	<i>farine</i>
Siwa	aren	<i>farine</i>
Ouargla	aren	<i>farine</i>
Guanche, Tenerife	ahoren	barley flour

In addition, *azamotan*, (Lanzarote) for barley dough may correspond to a well-known Maghribian dish, *zemmiṭa*, although this rather looks like an Arabic loan.

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Fig, *Ficus carica*, is one of the oldest attested tree-crops, with possible evidence for managed trees in the Near East as far back as the 12<sup>th</sup> millennium BC (Kislev *et al.* 2006). Remains of figs are found in Egypt from the First Dynasty onwards (Germer 1985: 24). Morales & Gil (2014) show that *Ficus carica* was a staple on the Canaries from the earliest period of its introduction. Its importance is shown by the use of two distinct roots for dried and green figs in Guanche and most Berber languages. The common term for fig in Guanche cannot be obviously etymologised.

Table 6 proposes a cognate for an unusual Guanche term for ‘dried fig’ and an apparently related word in Kabyle. Most Berber dictionaries do not record a distinct lexeme for dried fig.

**Table 6. A Berber/Guanche name for dried fig**

Language	Berber
Kabyle	taamriwt
Guanche, Gran Canaria	taharenemen

Table 7 shows that the Guanche name for ‘green fig’ has a Berber cognate on mainland languages, as well as in Moroccan Arabic.

**Table 7. Berber names for green fig**

Language	Berber	Gloss
Shilha	aħarmuš	unripe fig
Kabyle	akeřmus	<i>figue de Barbarie</i> (i.e. wild fig)
Guanche, Gran Canaria	achormaze	green figs
Arabic, Morocco	ķarmoř	

## 8.2 Domestic animals

The domestic animals kept by the Guanche were sheep, goats, pigs and dogs. Guanche shows a variety of cognates for sheep and goats with Berber terms. Since Islam swept across North Africa, with its ban on pork, the terminology of pigs has been largely lost, and Berber shows no very consistent indigenous terminology. Table 8 sets out a root that was probably a suppletive plural originally, meaning ‘flock of goats’. Whether the Guanche forms are truly cognate is uncertain.

**Table 8. Proto-Berber ‘goats’ \*welli**

Lect	Attestation	Gloss
Ghadamès	welli	goats
Elfoqaha	ulli	<i>gregge</i>
Chleuh	ulli	<i>petit bétail</i>
Kabyle	ulli	<i>brebis</i>
Figuig	ulli	<i>moutons</i>
Ouargla	welli, ulli	livestock herd
Tawellemet	wəlli	goats
Tamesgrest	wəlli	goats
Tafaghst	ulli	goats
Rif	uğği	<i>ovins et caprins</i>
Zenaga	u’lla’n	<i>brebis, chevres, agneaux</i>
Guanche (T)	ara	goat
Guanche (GC)	aridaman	flock of ~

Table 9 shows a root for ‘ewe’. The consistency of forms both in Guanche and from one end of the Berber spectrum to the other, argues strongly for the presence of sheep production in the earliest phase of Berber culture.

Table 9. Proto-Berber 'ewe' \*tehele

Lect	Attestation	Gloss
Siwa	əttəni	older lamb
Nefusa	tili pl. tattən	ewe
Tahaggart	tehele <i>or</i> tihəti pl. tihattin	ewe
Tayirt	tele	ewe
Tawellemet	tiləj	ewe
Tamesgrest	tele	ewe
Tafaghist	tehele	ewe
Zenaga	tijih pl. tatənh	ewe
Tachlit	tili pl. tattən	ewe
Guanche Gran Canaria	tahatan, tahaxan	ewe

The meaning of the root compiled in Table 10 is much less certain, although the geographic spread is very convincing. The *-daman* element in the Guanche citation might be cognate and so is given here.

Table 10. Proto-Berber 'ram, lamb'

Lect	Attestation	Gloss
Ghadamès	ažumar pl. žumarən	ram
Elfoqaha	zamar	<i>montone</i>
Nefusa	zumar pl. izumar	<i>agnello</i>
Siwa	izmər pl. izəmrən	ram
Chleuh	izimmr	<i>bélier</i>
Aurès	izmer	<i>agneau</i>
Figuig	izmer	<i>agneau</i>
Rif	izmā	<i>agneau</i>
Zenaga	əji'mmərh	ram
Sous	izimer pl. izamarən	ram
Tayirt	ežemər	lamb
Tawellemet	ežemər	lamb
Tamesgrest	ažemər	lamb
Kabyle	izimer	<i>agneau</i>
Middle Atlas	izimer	<i>agneau qui ne tête plus</i>
Guanche (GC)	aridaman	flock of goats

The main Guanche terms for 'pig' are *takazen* (Gran Canaria) and *atinaviva* (Palma). Wölfel (1965) plausibly relates *takazen* to a scattered Berber term meaning 'cooked meat'.

### 8.3 Animal products

Apart from the animals themselves, the Canarians also had a range of animal products, whose names show connections to Berber. Photo 5 shows a spherical ceramic vessel holding *mantica*, a type of solidified ghee. This method of storing animal fat seems to have been practised on most islands.

### 8.4 Fisheries

One of the unusual aspects of Canarian subsistence is the low importance accorded to fisheries. This might seem surprising, since the Guanche were surrounded by the abundant resources of the Atlantic. But their pastoral orientation and lack of boats may have discouraged all but low-level inshore capture fisheries. An intriguing piece of confirmation is that of the names for individual fish species in Guanche recorded in Wölfel (1965) turn out to be borrowings from Spanish or Portuguese.

Photo 5. Jar of solidified ghee



Source: Author photo, Museo Canario



## **9. Implications of aDNA results**

There have been a series of human genetics studies of the Canaries, both encompassing modern populations and historical osteological material. All of these essentially make the link with Berber populations of North Africa. Maca-Meyer et al. (2004) were the first to compare maternal lineages between Guanche mtDNA and modern North Africans. Fregel et al. (2009a,b) showed that paternal DNA was preferentially eliminated, pointing to the genocide of males and intermarriage between the conquerors and the remaining women. The most recent study (Rodríguez-Varela *et al.* 2017) compared 11 skeletons from Gran Canaria and Tenerife, dated to the 7-11<sup>th</sup> century CE, indicated strong similarities with Moroccan Berber populations. They also conclude that the present-day inhabitants of the Canaries have 16-31% of their genome comparable to the Guanche genotype.

**Photo 6. Bone fish-hooks, Gran Canaria**



Source: Author photo, Museo Canario

## **10. Idiosyncratic material culture**

One reason for eschewing a simplistic matching of Guanche culture with ancient North Africa are the large number of surprising and indeed idiosyncratic items. Some of these are recorded for all seven islands, whereas others are found on a single island. At least three, log coffins, shell belts and grass skirts, recall Austronesian material culture of Island SE Asia, although this is evidently coincidence. What they do indicate is a long period of isolation, perhaps intermittent visits by undocumented mariners from a wide variety of cultures.

### **10.1 Log coffins**

Log coffins are extremely familiar from the Southeast Asian region, but not from Neolithic Europe. Yet they are found in the Canaries, Gran Canaria and Hierro in particular (Photo 7). They are usually made of the dragonsblood tree (*Dracaena*) in order to repel insect damage.

**Photo 7. Log coffin, Gran Canaria**



Source: Author photo, Museo Canario

### **10.2 Shell belts**

Another unlikely parallel with Island SE Asia is the presence of belts, decorated with circular ornaments made from cut shells. The caption in the Museo Canario indicates these were funerary belts (Photo 8). They have been recorded on all islands except Hierro, so must have been introduced at an early period of settlement. These were found on

all islands except Hierro Again, these resemble those found in SE Asia, notably the Philippines, and not apparently any known ethnographic tradition on the African mainland.

Photo 8. Shell belt worn at funerary ceremonies



Source: Author photo, Museo Canario

### 10.3 Grass skirts

Similarly, the inhabitants of Gran Canaria also made grass skirts looking like those from Melanesia (Photo 9).

Photo 9. Grass skirt, Gran Canaria

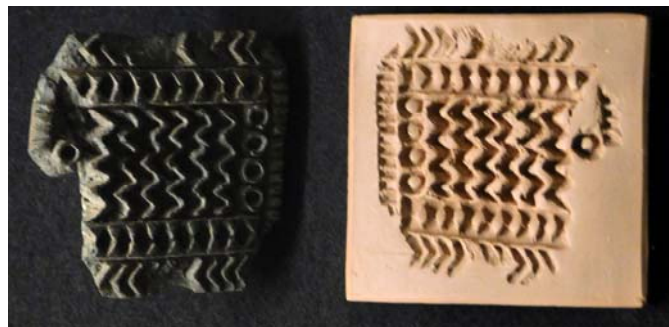


Source: Author photo, Museo Canario

### 10.4 Body stamp-seals

One of the most striking aspects of Gran Canaria material culture are the stamp seals of wood and terracotta. These were used to imprint elaborate coloured patterns, apparently on the body as well as on property, for example granaries (Photo 10, Photo 11).

Photo 10. Terracotta body-stamp



Source: Author photo, Museo Canario

Nothing like this has been recorded from the Moroccan mainland and either they are local innovation, which seems unlikely, or else they adopted from one of the many visiting cultures, such as possible the Phoenicians or the Romans. Although a wall-poster in the Museo Canario compares them to cylinder seals from the Near East, they seem fundamentally different in both design and intent.

### 10.5 Mummification

Mummification was famously practised in Ancient Egypt and in scattered locations across the world. However, it was not known in any of the source areas where the Guanche presumably originated. Nonetheless Guanche mummies were found on Gran Canaria, Hierro, Tenerife and La Palma (Photo 12). This indicates it was introduced early, when inter-island contact was still vibrant. The internal organs of the corpses were not removed, unlike Egypt, hence it is not thought to be a direct borrowing. Regrettably, the discovery of mummies stimulated a 'gold rush' in the 19<sup>th</sup> century and many tumuli were dismantled in the search for mummies which were carried off to institutes around Europe.

Photo 11. Wooden decorative stamp



Source: Author photo, Museo Canario



Photo 12. Mummy, Gran Canaria



Source: Author photo, Museo Canario

### 10.6 Fortified granaries

Of the items of material culture which speaks strongly to contact with the Moroccan coastal zone, probably in the last millennium, is the presence of fortified granaries on Gran Canaria, which closely resemble those made in the region of Agadir. These granaries are hollowed out from the soft volcanic rock, and were originally provided with wooden doors and even bolts or locks (Photo 13). Extremely similar structures were made on the mainland, also with lockable doors (Photo 15).

These granaries occur mainly on Gran Canaria and almost certainly bespeak late contact with the Moroccan coast. They are associated with an increase in human population and a concomitant increase in inter-community warfare, as testified in trauma on skulls. The rotary mills for grinding grain probably also date from the same period.

### 10.7 Rotary grain mills

Rotary grain mills, where the grain is ground between two circular stones, rotated by a vertical handle, are found on all seven islands in the Canaries (Photo 14). They have a long history in the Near East and were certainly in use in Morocco

Photo 13. Fortified granaries, Cenobio, Gran Canaria



Source: Author photo

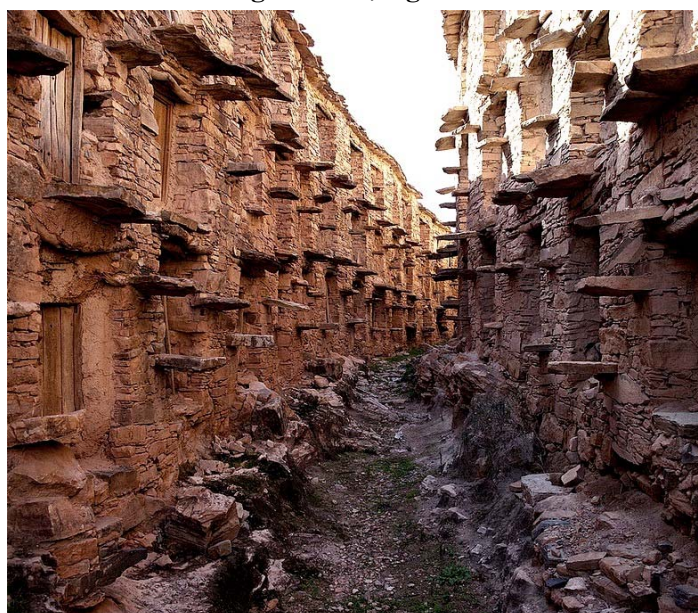
at the time when cereals were imported into the Canaries. Altogether rarer are the naviform, or oblong saddle-querns, only found on two islands, Gran Canaria and Lanzarote.

Photo 14. Rotary quernstone, Gran Canaria



Source: Author photo, Museo Canario

Photo 15. Fortified granaries, Agadir



Source: CC

## 11. Synthesis and the agenda for further research

In the light of this material, a potential scenario for the peopling of the Canaries consistent with existing data can be proposed. More precise chronologies await the publication of new radiocarbon dates. A hypothetical timeline is shown in Table 11;

Table 11. Chronology of the peopling of the Canaries

Date	Visit	Consequences
7 <sup>th</sup> century	Hanno	None
4 <sup>th</sup> century	Pseudo-Scylax	None
350 BC	Phoenician vessels carrying North African, Berber slaves	Domestic stock introduced, probably on all seven islands. Purpose of voyage to create resident populations who can gather dry-stuffs (murex and orchil)
23 AD	Juba	None
0 AD onwards	Roman	Shore trading for dyestuffs without technology transfer
100 AD onwards ?	Maghrebin	North African vessels expand populations bringing fig and cereal cultivation techniques. Ceramics and other cultural features spread around archipelago with existing maritime capacity, after which it is lost
1000 AD	Moroccan contact	Probably only with Gran Canaria. New architecture, possibly other crops, fortified granaries, rotary mills. Increase in population results in increase in communal violence
1312 AD	European contact	Process of Guanche extinction begins

Many questions about the peopling of the Canaries remain to be answered. The question of why the Canaries remained in the Neolithic until medieval contact remains difficult to answer unambiguously. The level of contact between shipmasters and their (probably) unwilling passengers was probably important. The Phoenicians almost certainly kept the Berbers they transported at a low technology level in order to assert control. If they were attacked in future visits, they would have had superior technology. Roman contact was also clearly at this minimal level. It is more surprising that the Moroccan contact around 1000 AD did not lead to traded metal goods, but again the nature of the trade probably meant that traders considered transferring metals and thus potential weapons, was unsafe.

The spread of technology between islands and subsequent loss of maritime techniques is unusual. The diversity of ceramics between islands shows that the technology was spread in the earliest phase of colonisation and that stylistic developments occurred in isolation. This type of cultural loss is documented



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for other island cultures, including Tasmania, Newfoundland and the Chatham Islands. Taiwan is known to have had metal smelting, but to have lost the technology and being reduced to raiding the Chinese mainland for metals. Clearly, the discovery and dating of stratified sites is a high priority for the Canaries.

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<sup>5</sup> The author is given on the cover as Jacob Bentejui Morales Mateos but it is given as Morales, Jacob in the bibliography for the sake of uniformity.

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