

The One-humped Camel in the Canary Islands: History and Present Status

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Summary

The one-humped camel (Camelus dromedarius L.) is not indigenous to the Canary Islands but based on historical references was introduced at the very beginning of the fifteenth century. The camel thrived in the subtropical dry environment. A long period of isolation from other animals of the same species meant that the animals were virtually disease free. This made the Islands an ideal base for exporting camels to new areas such that camels from the Canaries went to Peru in the sixteenth century, to Brazil in the eighteenth century, Venezuela and Bolivia in the early part of the nineteenth century and Australia in 1840. Camels went to several Caribbean islands in the middle of the nineteenth century. More recently (late twentieth and early twenty-first centuries) some animals were exported from the islands to mainland Europe, notably France, Spain and the Netherlands, and to South America. Camels have been used in military operations, as transport and draught animals in support of agriculture and have found a role in the tourist industry. In early 2013 there were some 1,300 camels distributed over four of the larger islands of the archipelago in herds varying in size from a single animal to herds of as many as 150 head: a large group of about 400 heads kept in a Safari Park on the island of Fuerteventura is considered as the national conservation herd. The "Canary" camel has recently been shown to be genetically distinct from most other populations and it has been proposed that it should be designated as a distinct breed.

Résumé

Le dromadaire aux Îles Canaries: histoire et statut actuel

Le dromadaire (Camelus dromedarius L.) n'est pas autochtone aux îles Canaries, mais sur base des références historiques, il fut introduit au début du XV^e siècle et a prospéré dans ce milieu subtropical aride. Cette longue période d'isolement avec les autres animaux de la même espèce et l'insularité des Canaries ont fait que ces dromadaires se sont retrouvés quasi-exempts de toutes maladies. C'est ainsi que l'archipel des Canaries est ainsi devenu un centre idéal pour l'exportation de dromadaires. C'est ainsi que des exportations eurent lieu vers le Pérou au XVI^e siècle, vers le Brésil au XVIII^e siècle, vers le Venezuela et la Bolivie au début du XIX^e siècle; et vers Australie en 1840. Les dromadaires ont colonisé plusieurs îles des Caraïbes au milieu du XIX^e siècle. Plus récemment (fin du XX^e et début du XXI^e siècles), certains animaux ont été exportés des îles vers le continent européen, notamment en France, en Espagne, aux Pays-Bas et en Amérique du Sud. Les dromadaires furent utilisés au cours d'opérations militaires pour le transport. Ils furent aussi utilisés comme animaux de trait en agriculture et participent aujourd'hui à l'essor de l'industrie touristique. Au début de 2013, on comptait environ 1.300 dromadaires répartis sur quatre des plus grandes îles de l'archipel. La taille des troupeaux varie d'un seul animal à des troupeaux privés pouvant atteindre 150 têtes. Le plus grand groupe, d'environ 400 têtes, se trouve dans un parc animalier sur l'île Fuerteventura et ce groupe est considéré comme le troupeau national de conservation. Il a été démontré que le dromadaire "Canarien" appartient à une population génétiquement distincte de la plupart des autres populations et il a été proposé qu'il soit désigné comme une race distincte.

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Introduction

"El camello es extremadamente frugal y sobrio. Susténtase con los pastos más despreciables de los campos y bebe de una vez para algunos días. Es a propósito para nuestros arenales y terrenos pedregosos. Camina muchas millas sin fatigarse y viene a ser como un carruage viviente para transportar grandes cargas, pues lo menos que puede soportar son seiscientas libras, y algunos más de mil."

José de Viera y Clavijo. Diccionario de Historia Natural de las Islas Canarias¹

The Canary Islands are the remnant cones of extinct volcanoes and are the westward extension of the Atlas Mountains of Morocco. The archipelago is centred on 28°1' N, 15°24' W, some 100 km off the northwestern coast of Africa opposite the (former) boundary between Morocco and Western Sahara (Figure 1). The seven larger and six smaller islands have a subtropical climate that is slightly hotter in the east and drier in the north. The highest point of 3,718 metres is the "Pico del Teide" on Tenerife. Known to the ancient Romans as the Fortunate Islands, "Canary" is said to derive from the large dogs (canes) that once lived on the islands. Phoenicians, Turks and Arabs attempted to subjugate and colonize the islands but it was not until 1496 that they were fully incorporated into the Kingdom of Castille. The aboriginal Guanche people have gradually been subsumed into the broader Spanish population. The total population in 2010, in a politically autonomous Spanish Region comprising the two Provinces of Santa Cruz de Tenerife and Las Palmas, was about 2.1 million, occupying a small part of (in spite of vast open areas) the land area at a high density. Following the Spanish conquest the economy was first based on sugar cane, then on grapes and subsequently on bananas. In the modern Canaries, agriculture is a relatively minor economic activity. The Islands derive the greater part of their income from tourism and the one-

humped camel – introduced about 600 years ago – is a cornerstone of the industry and has become one of the most important livestock species in the Region².

Introductions of camels to the islands

Early fifteenth century

The one-humped camel (*Camelus dromedarius*) is not indigenous to the Canaries and there is no evidence of a pre-Hispanic presence among the Guanche. Its introduction to the archipelago dates to raids by the Moors and the beginnings of European colonization. Camels almost certainly arrived on the islands from Africa possibly about 1405 although the historical record is not clear so the exact date is not known. Diego Garcia is credited with the first introduction and Juan de Bethencourt with the second (14). The suitability of camels to the islands led to their expansion throughout the archipelago but numbers were greatest in the south of Gran Canaria and Tenerife and throughout Fuerteventura and Lanzarote (18). Such was the affinity of the camel to these arid lands that only two centuries after its first introduction there were thousands of animals in the islands.

Late twentieth and early twenty-first centuries

For a period of several hundred years no or very few camels were imported to the Canary Islands. It was this long period of relative isolation that (in a time when export/import rules and regulations were in any case less stringent – if they existed at all – than they were later to become) that resulted in camels being exported from the Canaries to new lands (see next Section). It is estimated that in the middle of the nineteenth century there were as many as 10 000 camels on the Canary Islands. They then suffered a progressive decline as a consequence of the introduction of modern agricultural machinery and mechanized transport. By the 1990s the Canary camel was almost extinct but the upsurge in tourism

¹"The camel is extremely frugal and rustic. It survives on the most meagre pastures and drinks only once in several days. It is an ideal animal for our sandy soils and stony lands. The camel walks many miles without tiring, and is highly suitable for carrying heavy loads of at least six hundred and sometimes even more than a thousand pounds."

²The 350 000 goats on the Islands produce raw milk valued at 45 million Euros which can be multiplied 4- to 6-fold when converted to cheese (18).



Figure 1: Detailed and localization map of the Canary Islands (figures in black are locations and numbers of camels).

in the 1990s and 1990s and the popularity of the “exotic experience” of camel rides resulted in a recovery of numbers. During the 1990s small numbers of camels were imported from the Western Sahara by a prominent Canarian breeder in order to increase the biodiversity of his own stock as well as of that of the islands in general. An outbreak of Foot and Mouth Disease in the Western Sahara in the late 1990s brought an end to this trade and there have been no more recent imports.

The Canary Islands as a source of camels for other countries

From first introduction to the twentieth century

The almost 600 years of isolation (or 430 or so at the time) led to the belief that Canary camels had been in effective quarantine for that period and were thus free from disease or at least disease that could cause problems for importing countries³. The Canaries were thus a favoured source of camels whence they could be introduced into new lands (22).

South America was possibly the earliest destination for camels exported from the Canary Islands. An attempt to use camels in Peru in the middle of the sixteenth century was frustrated by complaints from slave traders that they would compete with these

poor unfortunates as a means of transport (6). It was to be another 200 years before further attempts to use camels in South America were made when some arrived in Brazil in 1793 (11). Camels were introduced to Venezuela from the Canary Islands early in the nineteenth century with the intention of using them for carrying sugar cane but the attempt failed because several animals died from snakebite (2). Bolivia imported 30 animals in 1845 and these had multiplied to about 100 head by the mid 1860s but their subsequent fate is not known (11).

Other exports of camels from the Canaries to the New World probably took place in the first half of the seventeenth century. These went to Barbados certainly before 1650 as a map of the island shows a pictogram of a camel (Figure 2) and there are several mentions of camels in the text which indicates they were used in transporting sugar (12). Camels also went to Jamaica from Lanzarote, probably some time later, where they were similarly used for transporting cane and rum (7, 13). The Jamaican camels survived at least 50 years but eventually succumbed to the effects of the jigger flea (11). There were about 70 camels in Cuba in 1841 that were then used for carrying copper ore but were later used for transporting sugar cane (2).

³Recent studie (3, 9, 21) have shown that this premise was not entirely true.



Figure 2: Seventeenth century map of Barbados with pictogram of camel (top centre).

The Canary Islands were the origin of the first introduction of camels to Australia (16). Nine camels were bought in Tenerife by three brothers named Phillips and four or six of these were loaded aboard the SS Apolline which had been chartered by the brothers in London. The Apolline docked at Port Adelaide in South Australia on 12 October 1840 and the sole surviving beast (named Harry) became the first camel in Australia and was bought by an early explorer, James Ainsworth Horrocks. Horrocks found the animal to be bad tempered and it often bit the men and goats (taken by the expedition for use as food) although it would carry loads of 160 kg for two days without water. Horrocks died from wounds he received from his own gun when his camel lurched into him as he was about to shoot a bird. Before this sad event, however, he ordered the camel be put down in order to avoid further accidents. Shortly after the arrival of Harry on the Australian mainland a male and a female camel were imported from Tenerife to Hobart in Tasmania in December 1840 but it is not known what happened to them (16).

The USA Government imported camels to Texas from Egypt and Tunisia for testing for army use in 1856 and 1857. Two private imports of camels followed the government experiment. A Mrs M.J. Watson reported to the Galveston (Texas) port authorities on 16 October 1858 that her ship had 89

camels aboard, claiming she wanted to test them for use as transport animals. Port officials felt, however, that the camels were being used to mask the odour typically associated with a slave ship and refused permission to unload the cargo (although slavery was not banned in the USA until the 1860s imports had been prohibited in 1808). Mrs Watson eventually dumped the camels overboard where they wandered about Galveston and died from neglect and slaughter around the coastal sand dunes.

A second civilian shipment of a dozen camels arrived at Port Lavaca (Texas, USA) in 1859 where it met a similar fate (4, 5). There is anecdotal evidence that these camels were from the Canary Islands.

South West Africa [SWA, now Namibia] became a German colony in 1884 (8).

The initial defence force (Schutztruppe, literally "protection troops") of six to ten men was augmented in 1889 by an additional eight regular soldiers and 13 reservists. The latter travelled from Germany under the command of Lieutenant Hugo von François on the British ship "Clan Gordon" which stopped at Tenerife. The troop was here joined by Captain Curt von François, the brother of Hugo, who arrived from the other German colonies of Cameroon and Togo. Captain von François was the first to realise the possibilities for camels in the

deserts of SWA. He gave names to the animals he bought in the Canaries and then sailed for the German colony where 10 camels arrived – the number that left the Islands is not known – at Walvis Bay on 23 July 1891 [Zondach, personal notes 1991 quoted by Nolte (15)]. In Namibian Herero tradition the year 1889 is still known and referred to at the present time as The Year of the Camel (8).

Late twentieth and early twentyfirst centuries

During the 1990s and into the early 2000s the Canary Islands have “exported” camels to mainland Spain as well as to other countries in Europe. As a legal part of the European Union (EU) the islands have a comparative advantage over non-EU states from where it is more difficult to get import permits. These exports have not, however, been without problems as they have resulted in the occurrence of trypanosomosis due to *Trypanosoma evansi* being recorded in mainland Europe for the first time. The disease, which was recorded for the first time in the Canary Islands in 1997 (whither it probably came with camel imports from Western Sahara sometime earlier), was found in camels in both mainland Spain and France. Both outbreaks were eventually controlled through massive treatments and monthly serological, parasitological and molecular (PCR) evaluations carried out by the Valencia Regional Animal Health laboratory in Spain and by CIRAD at Montpellier in France (3, 9, 21).

A Dutch farmer obtained three pregnant females in the Canaries in 2006 and brought them to Den Bosch in the Netherlands. In spite of the Canaries being a region of Spain he had problems with the administration who declared that camels were not on an approved EU list of farm animals⁴ (10).

In spite of the difficulties, however, he had built a herd of 40 head by 2010 and was exporting unpasteurized (another problem!) camel milk and milk products to Belgium, Germany and Great Britain as well as selling to a mainly Islamic clientele in the Netherlands (10).

Genetic resources

The “camello canario” is listed, clearly wrongly, as a Bactrian camel in the DAD-IS database (1). It has recently been added to the list of native Spanish livestock by the Ministry of Agriculture, Food and Environment as the “camello canario” with a local name of Castellano and is rated as a native breed in danger of extinction

(https://aplicaciones.magrama.es/arca-webapp/flujo.html?_flowId=razaOtrasEspecies-flow&_flowExecutionKey=e4s1,

The Canary Islands camel population was relatively isolated from other groups for more than 500 years. This isolation allowed this camel to differentiate itself from the geographically close African camel population through evolution and genetic drift. Morphological and behavioural differences between African and Canaries camels have been identified. Analysis of 11 microsatellite markers has shown that the level of inbreeding, measured by the statistic FIS, is almost three times higher in the African camel (3.2 versus 8.7) than in the Canary Island one. The genetic markers used showed significant differences between the two populations (FST=3.1 per cent) and have sufficient discrimination (> 99 per cent) to be able to identify individuals and paternity relationships.

⁴The animal health [and thus movement] requirements for intra-Union trade in ‘other’ live animals are laid down in Council Directive 92/65/EEC of 13 July 1992 as subsequently amended: ‘other’ live animals include some ruminants, Camelids (e.g. llamas, alpacas) [note no mention of camels], cats and dogs (for commercial imports only), bees, apes, rabbits and hares, exotic birds, ferrets, mink, foxes, zoo animals and other exotic species. More stringent quarantine and testing regimes are applied to imports from non-EU countries [note that intra-Union movements are referred to as “trade” whereas movements into the EU from third party countries are classed as “imports”.

Table 1

Location, ownership, numbers and use of camels in the Canary Islands.

| Location | Owner\ ^a | Number\ ^b | Notes |
|-------------------------------------|---------------------------------|----------------------|------------------------------|
| Lanzarote | | | |
| Uga (Parque nacional de Ti-manfaya) | 34 owners | 500 | Tourism in National Park |
| Puerto del Carmen | Lanzarote a Camello | 10 | Tourism |
| Playa Teguise | Los Aljibes Restaurant | 1 | Retired |
| Fuerteventura | | | |
| La Lajita | Oasis Adventure Park | 400 | Tourism; Conservation herd |
| Caleta de Fuste | Hotel Castillo de San Jorge | 3 | Tourism |
| Lajares | Camel Safari | 2 | Tourism; Sentiment |
| La Oliva-Corralejo | 5 owners | 12 | Sentiment |
| Tenerife | | | |
| Arona | Camel Park | 13 | Tourism |
| Oasis del Valle (La Orotava) | Camello Center | 2 | Exhibition |
| El Tanque | Camello Center | 45 | Tourism |
| Adeje | Camello Center | 8 | Tourism |
| Gran Canaria | | | |
| Maspalomas | Camello Fataga (2 farms) | 150 | Tourism; breeding for export |
| Ruta de Fataga | Camel Park (La Baranda) | 65 | Tourism |
| Ruta de Fataga | Camel Park (Manolo Safari Park) | 45 | Tourism |

Notes: a) in addition each island has 3-6 owners with 1-3 camels kept for sentimental reasons (total number ~35)

b) numbers for Uga and La Lajita are approximate

**Figure 3:** Camels in traditional agricultural roles in the early twentieth century.



Figure 4: Canary camel tourism then (early 1900s) and now (early 2000s).



Figure 5: "English" tourist saddles at Camel Park, Tenerife.



Figure 6: A breeding group with calf near Timanfaya National Park on Lanzarote.



Figure 7: Pied camels in the conservation herd at Oasis Park near La Fajita on Fuerteventura.

This evidence provides a strong argument for considering Canary Island camels a distinct breed to be known as the Majorero with its closest relation being camels from Tindouf in Algeria (19, 20).

Use

Historically camels in the Canary Islands have been used over an eclectic range of activities.

When Sir Francis Drake's attack on the Canaries was repulsed in 1596 camels were used to carry cake and wine to refresh the defending troops. Three years later in 1599 the Islands were attacked by a Dutch contingent under van der Does lands and Las Palmas de Gran Canaria was captured. The local authorities retreated to the interior with camels carrying the court archives and personal items but at one stage the camels were diverted to haul artillery pieces that were proving too heavy for human endeavour alone (1). On other occasions camels were used as mobile cover by the islands militias. In October 1740, for example, English pirates attacked Fuerteventura but the Majoreros (inhabitants of Fuerteventura) using 40 camels as a mobile cover sowed panic among the invaders who retreated forthwith (17).

For much of the nineteenth century and during the early part of the twentieth camels were used mainly as transport and draught animals in support of the Islands' agriculture (Figure 3) although in the latter period the beginnings of tourism were evident. The main use of camels in the early twentyfirst century is in tourism although the style of this is at considerable odds with that of a century earlier (Figure 4). The saddle employed in the Canaries appears to be unique. Known as the 'silla de brazo' or chair saddle it originally comprised a standard type saddle placed over the hump but had two outward extensions which served for loading boxes of harvested grapes, casks and sacks. This has developed into the "English" saddle which is currently used for carrying tourists (Figure 5). At the present time it can thus be seen that the main economic use of the Canary camel is in tourism. It is not slaughtered for meat. Plans for the development of a dairy industry have not materialised due to the problems of importing camels from the African mainland and the

difficulties of "exorting" milk and milk products to the European mainland ((Gutiérrez, personal observations and discussions with producers).

The Canary Islands camel population in 2013

In January 2013 the total population of camels on the four islands was just under 1,300 (Table 1). The current distribution reflects the historical situation with most animals being in the south of Gran Canaria and Tenerife and spread more widely over Lanzarote and Fuerteventura where overall numbers are greater than in the two more westerly islands (Figure 1). There is little exchange of animals among the islands.

The greatest number of camels is to be found on Lanzarote. Some 500 head are owned by up to 32 proprietors in the southwest of the island close to Timanfaya National Park. These animals, which constitute a good breeding population (Figure 6), are used in rotation to carry tourists for very short excursions close to the park boundaries. There is one other small group of camels on Lanzarote and one lone animal near Playa Teguiise on the eastern side of the island.

The 400 or so camels at the Oasis Safari Park at Fajita on Fuerteventura see limited use for tourism. This group essentially constitutes, however, the islands' (and Spain's) conservation herd. Although most of the animals here are typically sandy to brown in colour a number of pied animals (Figure 7) indicate the considerable amount of diversity within the group. Other small groups of camels are used for tourism and kept for sentimental reasons ("because my grandfather used them for farm work") complete the camel resource on this island. The use of camels for tourism is more highly developed on Gran Canaria than on the other islands. Three relatively large scale operators own a total of about 460 camels. These are based at Maspalomas on the southeastern coastal dunes and to the northwest on the Fagata road on higher and rockier ground. The major operator here has other camel operations in and strong links with Western Sahara and was the main exporter of stock to mainland Europe before these animals were found to be infected with trypanosomes.

Tenerife has the least number of camels of the four islands there being less than 70 head here. With the exception of two animals in the north three smallish herds are kept on the southern part of the island.

Identification and traceability

There are differing standards of identification and traceability among the islands almost certainly due to the "other" animal status of camels (Gutiérrez, personal knowledge). Thus on Tenerife all camels are required to have individually numbered tags. On Fuerteventura animals are identified by means of ruminal boluses. On the other islands camels are in the process of being tagged and are given an individual number and registered if they are visited and treated for disease by a state veterinary officer. Several owners on one or other of the Islands are interested in identification by microchip but this method is not yet in operation

Animals that die on Tenerife have to be placed in deep pits and covered in quicklime before the hole is refilled with earth: the police have to be informed of the death. On Gran Canaria dead camel carcasses were refrigerated before being shipped to the mainland for incineration (there being no facilities on the island for this operation) but the cost of this operation proved prohibitive and it is now in abeyance.

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