

Chapter 1

Historical Background and Population of Camels

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ABSTRACT

Camels were designated as the ships of the desert. This chapter includes some introductory remarks on the historical background and population of camels. In this chapter, the origin of camels based on the most recent mitochondrial genome analysis and incisor fossils was reviewed. Based on the results of these studies, camels were found in different parts of the world such as North America, Africa, Russia, China, Magnolia, Iran, and Middle Eastern region. Different genus and species of camels were also reviewed in the chapter. Additionally, the distribution of camel population worldwide as well as the uses of camels were reviewed. This chapter introduces some essential figures on the economic value of camels based on the most recent statistics of the Food and Agricultural Organization (FAO).

INTRODUCTION

Camels have a long history, but even if recent discovers were available in the literature on the origin of the camels' ancestors (Rybczynski, Gosse, Harington, Wogelius, Hidy & Buckley, 2013) and on the domestication of modern camel (Almathen et al., 2016), some data are still lacking.

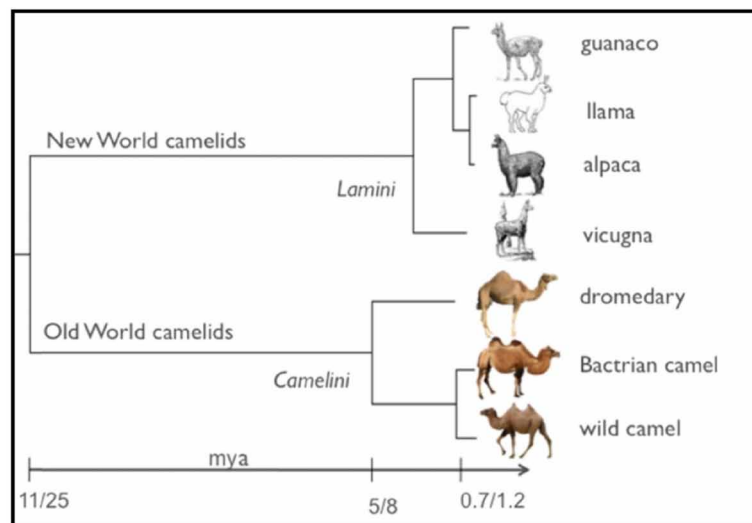
This chapter aims at introducing some introductory remarks on the historical background and present population of camels. The origin of camels based on the most recent mitochondrial genome analysis and incisor fossils are reviewed. Different genus and species of camels are also reviewed. Additionally, the present distribution of camel population worldwide as well as the uses of camels are reported here. This chapter introduces also some essential figures on the economic value of camels which based on the most recent statistics of the Food and Agricultural Organization (FAO), the only available data at world level.

Historical Background of Camels' Ancestors

Many people believe in the myth that camels have originated from rabbits because camels have grooved upper lip-like structures similar to those of rabbits. Nonetheless, many researchers showed that the origin of camel can be traced to *Protylopus*; a rabbit-sized animal with four-toed feet, low-crowned teeth, which lived in America during Eocene period 40-45 million years ago (Indra, Magash, & Biichee, 1998). Several genera of camelids developed and disappeared over the following million years (Rybczynski et al., 2013). After *Protylopus* (Eocene), paleontologists described the *Poebrotherium* (Oligocene), the *Procamelus* (Miocene), the *Paracamelus* (Pliocene) and others. The *Camelus* genus appeared at early or middle Pleistocene (Monchot, 2015). The ancestors of camelids are originated from North America. Fossil was found in Ellesmere Island at 97th parallel north or 1200 kilometers away from the Yukon early camel fossil remains place and it represents the most northerly record for early camels. The size of Ellesmere camel tibia was larger than that of the modern camels by 30% and lived at 20°C-30°C warmer than nowadays temperature (Yam & Khomeiri, 2015).

The *camelus*' ancestors reached Eurasia via the Bering strait around 6.5-7.5 Million years and fossils of direct ancestors of the modern *Camelus* (*Paracamelus*, *Camelus thomasi*), appearing as “giant camels” were recorded in Asia (Kozhamkulova, 1986), Spain (Pickford, Morales & Soria, 1995), Northern Africa (Peters 1998) and Syria (Martini, Costeur, Le Tonsor & Schmid, 2015). In another hand, the ancestors of New-World camelids entered South America around 3 Million years ago (Rybczynski et al., 2013). So, according to the recent complete analysis of camel mitochondrial genome by Burger (2016), world camelids belong nowadays to either of the domestic New-World camelids (*Lamini*) or Old-World Camelids (*Camilini*) (Figure 1). Those two genera probably diverged more than 16 million years ago (Burger, Ciani, & Faye, 2019).

Figure 1. Classification of the camelidae family
(Adapted with permission from Burger, 2016)



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