Camel a True Miracle: Extraordinary Attributes, Cultural Significance and Human Roles

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ABSTRACT

This article presents a comprehensive review of camels' extraordinary attributes, historical and cultural significance, and multifaceted roles in human existence. Classified under Artiodactyla, camels possess unique adaptations for survival in arid environments, including efficient water conservation, heat regulation, and resource utilization. Their historical importance in trade and transportation networks like the Silk Road, as well as their deep connections with nomadic communities, are explored. Camels also hold symbolic value in religious traditions, particularly in Islam. Their practical contributions as lifesavers, providing essential food and medicinal resources, and serving as reliable transportation in remote areas, further exemplify their significance. In conclusion, this article illuminates camels' remarkable nature, from biological adaptations to their vital role in sustaining human populations in arid regions.

Keywords: Camel, attributes, characteristics, desert, population

INTRODUCTION

The camel, often hailed as the "ship of the desert," holds a profound place in the hearts and lives of people residing in arid regions. Camels are classified under the order Artiodactyla, genus Camelus, and family is Camelidae, which consists of three species: *Camelus dromedarius*, *Camelus bactrianus*, and *Camelus ferus*. The single-

humped camel (*Camelus dromedarius*), the double-humped camel (*Camelus bactrianus*), and the endangered camel species (*Camelus ferus*) have extensive distributions across various regions, including Africa, the Middle East, Central Asia, China, as well as remote areas of Mongolia and Northwest China (Kadim, 2009; Burger *et al*., 2019).

From its astounding adaptations that enable survival in harsh environments to its pivotal role in trade and transportation, the camel exemplifies a true miracle. Camels fulfill a crucial economic function in arid and semi-arid regions worldwide, and their milk holds great importance in the human diet (Hussain *et al*., 2016; Faye, 2020).

Camels possess unique physical characteristics that enable them to thrive in challenging environments characterized by high temperatures, intense solar radiation, and limited food and water resources (Kurtu, 2004).

This Review article embarks on a captivating exploration of the remarkable attributes of camels, delving into their historical and cultural significance, as well as their multifaceted roles in human existence.

Global and Pakistani Perspective on Camel Population

The population of camels has seen a notable increase, which can be attributed to various factors such as seasonal variations, the development of camel farming, improved adaptation techniques, and advancements in equipment that contribute to a more favorable ecological scenario. Globally, the total camel population stands at 35 million (FAOSTAT, 2020).

Dromedary camels account for 94% of the total, while Bactrian camels make up the remaining 6%. Several countries play a significant role in maintaining high camel populations, including Somalia, Sudan, Chad, Kenya, Niger, Mauritania, Mali and Pakistan (Faraz *et al*., 2019*a*,*b*). In Asia, the camel population constitutes 13.8% of the global total. Pakistan and India are responsible for driving 70% of the camel population in Asia. Notably, according to FAO reports, Pakistan holds the eighth position worldwide with a population of 1.1 million camels.

Over time, Pakistan has observed a gradual increase in its camel population. The country hosts various camel breeds distributed across different regions: Baluchistan accounts for approximately 41%, Sindh 30%, Punjab 22%, and KPK 7% (Faraz *et al*., 2013; Marghazani *et al*., 2019).

Miraculous Nature of Camel

Camels possess remarkable adaptations that allow them to thrive in challenging environments. They have the ability to consume and extract nutrients from poor quality forages, and their fore stomach can retain feed for up to 70 hours. They recycle urea from their kidneys to produce microbial protein. Unlike other ruminants, camels exhibit superior digestion of fibers and various feedstuff (Khan *et al*., 2003). Their unique feet are designed to prevent sinking into desert sands, with spread-out toes providing stability. Their close-set nostrils naturally shield them from sand particles during storms. Camels' humps store fat reserves that they can utilize during harsh conditions.

They demonstrate remarkable survival capabilities in tropical environments and regions with limited water resources. They have captivated human fascination throughout history. In the absence of food and water, camels can survive for 5-7 days in summer and up to 50 days in winter (Faraz *et al*., 2019*c*). While a reliable source of quality pasture with sufficient moisture can sustain them without the need for water. Camels have a diverse diet, encompassing shrubs, herbs, grass, and thorny plants that are often inedible to other animals.

The Camel's Extraordinary Adaptations

The camel's physical characteristics and adaptations are a testament to its resilience and extraordinary design:

1) **Water Conservation Mechanisms:** Camels possess remarkable water conservation mechanisms that allow them to survive in arid environments. Their humps, contrary to popular belief, store fat rather than water, serving as an energy reserve during times of scarcity (Kurtu, 2004).
2) **Heat Regulation:** Adapted to endure scorching temperatures, camels have long legs that elevate them from the hot desert sand, while their thick fur and long eyelashes

shield them from the intense sun. These features enable them to maintain a stable body temperature even in extreme conditions.

3) **Efficient Water Utilization:** Camels exhibit exceptional efficiency in water utilization, extracting moisture from the vegetation they consume, thereby maximizing the utilization of limited water resources (Faraz *et al*., 2021).

Historical and Cultural Significance

Throughout history, camels have played a pivotal role in various civilizations, leaving an indelible mark on culture, trade and religion:

1) **Trade and Transportation:** Camels have been integral to the success of long-distance trade and transportation networks (Khan *et al*., 2003). The ancient Silk Road and Arabian trade routes owe their prosperity to the camel's endurance, strength and ability to traverse vast distances with heavy loads.
2) **Nomadic Life:** Nomadic communities, such as the Bedouins, have formed deep bonds with camels, relying on them for survival. Camels provide transportation across vast desert expanses, milk for sustenance and even shelter within their tents (Faraz *et al*., 2020).
3) **Symbolism and Religion:** Camels hold symbolic significance in various religious traditions, particularly in Islam. The Quran invites contemplation on the marvel of camel's creation, as exemplified by the verse

"Do they not look at the camels, how they are created?" (Alghashiya 88:17-20).

Camels as Lifesavers

Camels have proven to be invaluable assets, offering sustenance, transportation and even medical resources, thereby exemplifying their indispensable role:

1) **Food and Milk:** In arid regions where, other livestock struggle to survive, camel meat and milk serve as vital sources of nutrition. Camel milk, recognized for its high nutritional value and medicinal

properties, has gained recognition worldwide (Hussain *et al*., 2016).

2) **Transportation:** Camels continue to be relied upon as a reliable means of transportation in remote areas. Their ability to carry heavy loads across long distances and navigate rugged terrains makes them indispensable for human mobility in challenging terrains.

The Prophet Muhammad (peace be upon him) said, "The camel is the true miracle of Allah. It is a gentle and patient creature that carries heavy loads across the desert, enduring the harshest conditions and providing sustenance to its riders." Sunan Ibn Majah, Book 25, Hadith 3114.

3) **Medical Benefits:** Traditional medicinal practices have utilized various camel-derived products, including milk, urine and dung, for their potential therapeutic properties. Modern research further explores the medical potential of camel-related substances, including antibodies found in camel blood that hold promise in combating diseases. Traditional medicine has utilized various parts of the camel, including milk, urine and dung, for their potential therapeutic properties. Research has shown that camel milk contains antimicrobial and immunomodulatory properties, making it effective in treating certain health conditions (Faraz, 2020).

4) **Antibodies and Disease Resistance:** Camels produce a special type of antibody called a nanobody or VHH antibody, which is smaller than conventional antibodies found in humans and other animals. These nanobodies have shown great potential in various medical applications, including diagnostics, drug delivery and treatment of diseases such as cancer and infectious illnesses (Pak *et al*., 2019).

Conclusion

The camel, a true marvel of creation, encompasses divine wisdom and purpose. Through its remarkable adaptations, historical significance and multifaceted contributions to human life, it exemplifies a miracle bestowed upon us by Allah.

From providing sustenance and transportation to symbolizing patience and endurance, the camel's presence enriches the lives of those residing in arid regions. Let us appreciate the intricate beauty and interconnectedness of all creation, recognizing the camel as a testament to Allah's wisdom and a reminder of the miracles that surround us.

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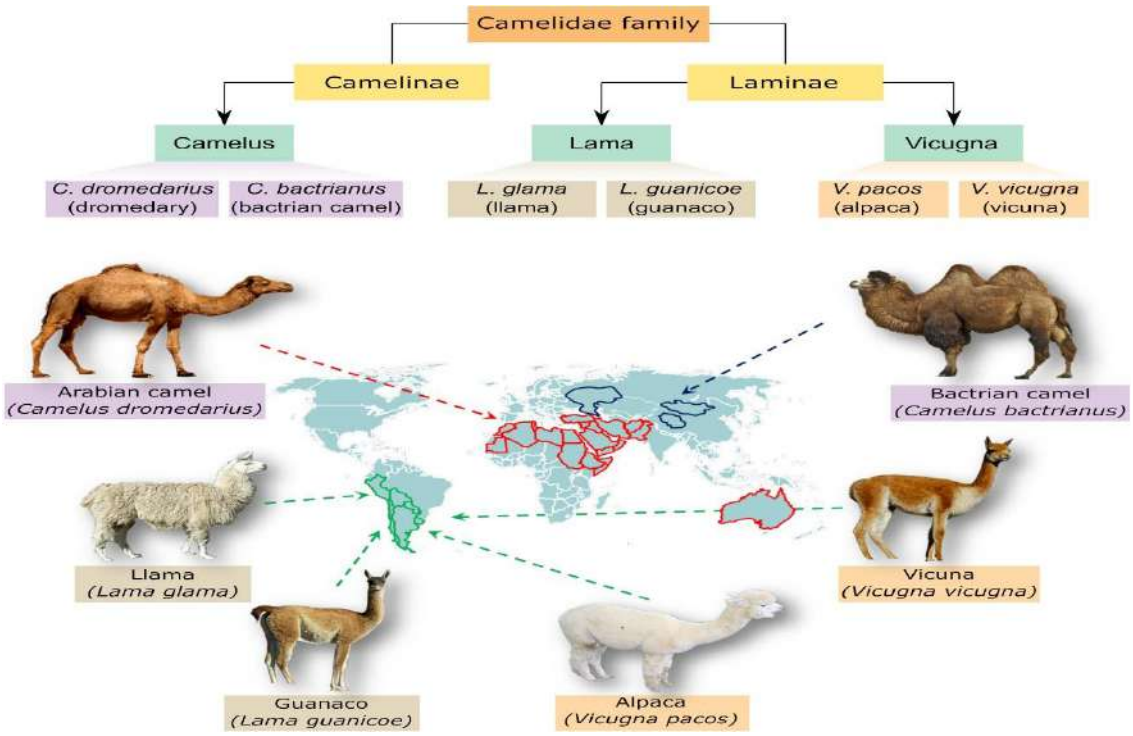
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Source: (Hoter *et al*., 2019)