

Veterinary medicine and animal care in ancient Maghreb

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Abstract---Veterinary medicine, or more accurately animal medicine during the period under study, is considered one of the fundamental branches of medicine. It works to protect animals and maintain their health and treat injuries. It also plays a part in preventing humans from contracting diseases that can be transmitted through infection, as well as combatting pandemics and diseases that could have a devastating effect on the environment. This research paper aims to clarify the history of veterinary medicine and its role in various ancient civilisations, leading to the Maghrebi cultures. It begins by emphasising the importance of wild and domestic animals, drawing on sources that cover animal care and treatment methods.

Keywords---Ancient Maghreb, veterinary medicine, animal diseases, animal status and utilisation, animal treatment.

Introduction

The human settlements observed in ancient North Africa are pivotal indicators of the development achieved by the ancient Maghrebi populations. Any historian would agree that there is a strong and direct correlation between population stability and economic growth, including agricultural, industrial and commercial expansion. This undoubtedly leads to the emergence and development of civilisations. Focusing on the relationship between settlement and agriculture, material and literary sources confirm the indirect connection between the two.

When discussing animal husbandry and domestication, the various challenges faced by the inhabitants of ancient North Africa come to light, including those related to nutrition, housing and animal health. While the significant importance attributed to animals by ancient North African populations is widely

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4864

acknowledged, the medical treatment and therapeutic procedures related to them remain unclear and require further research.

To what extent did ancient civilisations prioritise the treatment and care of animals? How significantly did animals affect human life? What methods and techniques did the ancient Maghreb peoples employ in the treatment of animals?

Elements:

The concept of veterinary medicine

- The role of veterinary medicine among ancient peoples
- Animals in the Maghreb (uses, types, evidence).

In the concept of veterinary medicine:

Veterinary medicine is a branch of preventive and therapeutic medicine focusing on animal health and treatment. Veterinarians diagnose diseases and provide medical and surgical treatments¹. Dr Salah bin Abdul Aziz Al-Shami defines it as a specialty concerned with studying all sciences related to animals from biological, health and productive perspectives, as well as how to manage and diagnose medical conditions in order to identify their causes. Veterinary medicine also studies diseases that are common to both humans and animals².

George Tanous defines veterinary science as the discipline that investigates the health and diseases of domestic animals. However, this definition focuses on a specific type of veterinary practice — the treatment and care of domesticated and tamed animals — while neglecting wild animals in general³.

From these definitions, we can infer that veterinary medicine is no less important than human medicine. Not only is it related to animal health, it also significantly contributes to human health and safety, food security and environmental safety. The essential tasks performed by a veterinarian include:

1. Diagnosing and treating diseases and injuries in animals.
2. Performing surgical operations, including anaesthesia and sterilisation.
3. Providing preventive care, such as vaccinations and regular check-ups.
4. Supervising animal health to ensure the production of safe food.
5. Conducting veterinary research to develop new treatments and medications.
6. Contributing to public health by monitoring diseases that affect both humans and animals⁴.
7. Implementing emergency treatment procedures, including quarantine and culling, to limit the spread of epidemics and pandemics.
8. Inspecting animal-derived food products to ensure they are safe.
9. Supervising the slaughtering and skinning processes to ensure optimal meat quality.
10. Protecting public health.
11. Preserving the environment.

The roles of ancient veterinarians were often limited to applying human medical treatments to animals using the medicines and means available at that time, as they were mainly human doctors. It is impossible to compare this with the functions of veterinarians today. However, this does not diminish the importance of these procedures.

An overview of veterinary medicine in ancient civilisations:

It is difficult to pinpoint the exact date and location of the emergence of veterinary medicine. The archaeological evidence found in ancient civilisations merely attests to the period when humans began documenting and recording details of their daily lives. However, it is likely that veterinary medicine emerged shortly after, if not concurrently with, the domestication of animals. This period is estimated to have occurred between 12,000 and 10,000 years BC.

Below are some of the civilisations that showed early concern for animal care:

1. Veterinary medicine in ancient Egypt

Dr Nadia Fanous⁵ confirmed in Sada El-Balad magazine that the ancient Egyptians were the first to recognise veterinary medicine, predating the Greeks. She noted that veterinary medicine was mentioned in medical papyri such as the Kahun Papyrus⁶, which describes veterinary activities in the Nile Valley around 1900 BC. She also mentioned that the papyrus published by the archaeologist Flinders Petrie dates back to a period long before the Middle Kingdom, and is notable for its insights into the veterinary treatment of geese, fish and cattle. Notably, the papyrus also emphasises the treatment of animals' eyes⁷.

2. Veterinary medicine in ancient Greece

Veterinary medicine in ancient Greek civilisation was more advanced than in other contemporary societies because it was closely linked to human medicine. Greek physicians applied the same therapeutic techniques used on humans to animals, performing surgical operations and studying animal anatomy through dissection to help them understand human anatomy. One of the most famous Greek veterinary doctors was Metrodorus, who specialised in treating animals⁸.

3. Veterinary medicine in ancient India

India saw the establishment of the world's first veterinary hospital around 250 BC under Emperor Ashoka. The physician Shalihotra (3rd century BC) is also considered to be the founder of Indian veterinary science. Like Greek doctors, he applied all the principles of human medicine to animals, including surgery and dissection. Indian authors also wrote specialised veterinary texts for livestock physicians and applied the principles of Ayurveda (ancient Indian medicine) to animals and plants⁹.

4. Veterinary medicine in Mesopotamia

Veterinary medicine dates back to around 3000 BC in Mesopotamia and was considered part of religious beliefs. It was associated with the goddess Gula, who was responsible for health and healing. Unlike in previous civilisations, veterinary medicine in Mesopotamia relied less on medical procedures and more on deities, religious rituals and spiritual practices¹⁰.

Animals in the Ancient Maghreb (Uses, Types, and Evidence of Their Existence):

Researchers and specialists in the history of the ancient Maghreb are well aware that, since the beginning of human settlement in the region, animals have held significant importance, similar to adjacent areas. The fields in which animals were used varied according to their types and their ability to perform specific tasks. Among these roles, we find:

Religious Significance (Veneration and Worship):

Animals held important religious significance in all ancient civilisations, from primitive societies to more advanced ones. They were considered symbols of various divine attributes. They were associated with characteristics rarely found in humans. Consequently, deities were often depicted in animal form, as seen in ancient India, where some of the most sacred gods were represented as cattle and serpents¹¹. Similarly, the ancient Egyptians represented some of their gods as cats¹², dogs, crocodiles¹³ and rams¹⁴. The same applies to the ancient Maghreb civilisation. In addition to their reverence for natural phenomena such as stones, caves, springs, trees and planets¹⁵, they also venerated animals due to the awe and fear inspired by their diversity, strength and ferocity¹⁶.

They explained this overwhelming power, which they sometimes found difficult to confront, by saying that the gods had chosen those animals' bodies as their abodes. Thus, the body remained animal while the spirit became divine. In reality, they venerated the spirit, not the body. When they struggled to depict a deity

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the spirit became divine. In reality, they venerated the spirit, not the body. When they struggled to depict a deity's spirit apart from animal forms, they began to worship the animal in its entirety.

There is much archaeological evidence in various regions of the ancient Maghreb indicating the significant religious status of certain animals, including:

- Bovine animals (cattle, bulls, buffalo).

- Rams

- Lions

- Snakes

- elephants

Horses

- Goats

- Crocodiles

Serpents, among others.

2. Hunting and domestication

In the early stages of human existence, people relied on hunting to meet their basic needs and secure their livelihood. They hunted animals in herds or set traps for large, predatory animals to obtain food, utilising various tools in the process. This is evident in the rock art mosaics at Tassili, which depict individuals holding bows and approaching consumable animals cautiously¹⁷.

The people of the Maghreb also hunted for the purpose of protecting their fields, herds and homes from predatory animals that threatened both agricultural crops and human life. The mosaic scenes depict the pursuit of wild animals, with some showing hunters standing near homes or alongside agricultural crops to protect them.

These mosaics are geographically distributed as follows:

- Some are located in the southern areas bordering the desert, showcasing gazelles.

- Some are found in the interior steppes, where predatory animals like lions and hyenas reside.

- Others are in forested areas, where wild boars were abundant¹⁸.

Later on, drawings and engravings emerged depicting humans walking alongside dogs, which is a clear indication of the beginnings of animal domestication. However, these images did not become widely popular, suggesting that dogs were not commonly used for hunting or guarding. Stephen Gisel notes that the use of dogs became more popular in the Roman era, as the Numidian kings were not accustomed to employing such animals¹⁹.

The Romans placed great importance on hunting, making it a favourite pastime for many kings and prominent figures in Roman society²⁰. Herodotus wrote that ancient Libya was home to large predatory animals such as lions, elephants and bears, as well as other species found in the region. The western part of Libya was teeming with fierce beasts that dominated the mountainous and wooded areas and were home to wild animals such as lions, elephants, bears and horned donkeys²¹.

During the Roman period, hunting evolved as the Romans transformed it from a functional necessity into a purely recreational activity. The scope of hunting expanded in Roman society, with large forested areas being allocated for this purpose. Narrower hunting grounds were established to enhance the experience, often selecting the most ferocious and wild animals for this purpose. Hunting reached its peak during the period from the reign of Emperor Domitian²² to that of Caracalla²³, when rulers encouraged hunters to embark on continuous hunting expeditions in exchange for substantial financial rewards²⁴. Classical sources²⁵ confirm that the ancient Maghreb was ideal for the Romans' purposes as it was fertile ground for predatory animals.

Grazing and Ploughing the Land

When we categorise important economic activities in ancient Maghreb, grazing is the second most significant after hunting. Farmers and livestock breeders grazed the herds of animals they owned on their farms and estates. The herds typically consisted of goats, sheep or cattle. This is evident in the mosaics of Senator Julius in Carthage, dating back to between 348 and 400 AD, which depict two scenes illustrating grazing²⁶. The first scene shows a group of animals guarded by a hunting dog and accompanied by a rider on a horse. The second scene features a shepherd tending to his sheep and holding a shepherd's crook in his left hand²⁷.

A man is also depicted above, supervising the process with the help of some oxen, which confirms their common use in agriculture.

Sports games (wrestling and racing):

The use of animals for entertainment in the Maghreb dates back to the Roman period. As well as hunting games organised in arenas and theatres, there were also animal wrestling games that became famous in Roman civilisation due to the Romans' peculiar fascination with the sport, despite it being bloody. Many emperors, such as Commodus, became renowned for their wrestling skills long before they were recognised as political leaders or military commanders.

Animal wrestling first appeared in Italy, where the Romans developed it by introducing new methods and techniques. By the time it reached the ancient Maghreb, there were two types of wrestling: animal-versus-animal and human-versus-animal²⁸. These games were accompanied by organised celebrations and motivational prizes, including commemorating famous wrestlers' names on mosaic panels²⁹.

The Maghreb became renowned during the Roman era for its various animal races, including lion racing and, most famously, horse and chariot racing. Horse and chariot racing was associated with the Roman religious calendar within the framework of public games and became so significant that 64 days were allocated to it out of a total of 175 days designated for games throughout the year.

The racing events began with the race sponsor signalling the start by throwing a piece of white cloth called a 'mappa'. Horns sounded to announce the start of the chariot races, which took place on designated tracks and involved seven laps. The second phase involved navigating around ten rocks on the track, which was considered the most dangerous part of the race. In the final phase, a white line was drawn in front of the judge's stand and the first chariot to cross it was considered the winner. Prizes often took the form of medals, palm leaf wreaths, crowns, golden armbands and gilded cylinder weights³⁰.

Transportation, Trade and War:

The Grammata tribes had strong trade relations with the Phoenicians, and later the Carthaginians. Due to their extensive knowledge of the desert and its paths, and their ability to protect trade caravans, they took on the task of linking the northern and southern parts of the continent, specifically along the eastern routes connecting the desert to the northern regions.

Some believe that Herodotus indirectly referred to these trade caravan routes in the fourth book of his Histories, when detailing the ancient Libyan tribes³¹. The Gramant's exports comprised animal products, foodstuffs, minerals, precious stones, raw materials and slaves³². In contrast, their imports were minimal compared to their exports, as noted by Warmington³³. These imports consisted mainly of domestic pottery, including food containers and storage jars, as well as Athenian pottery, glass bottles, Phoenician perfume vials and silver vessels, alongside oils, wines and textiles. In essence, they exported raw materials and imported manufactured goods.

The Gramant used oxen to pull carts and transport goods to and from their desert settlements. This is evident from the rock art found in Fezzan, which depicts the use of oxen for pulling carts and for

riding³⁴. However, issues arose concerning the use of oxen for transport, primarily their inability to withstand thirst for extended periods and their need for large amounts of fodder and pasture³⁵. Therefore, there was a need to rely on other, more adaptable animals that could endure hunger and thirst and were less costly. Donkeys were subsequently utilised after their domestication, and the Garamant's trade caravans included large numbers of donkeys for crossing the desert. Evidence suggests that the Nasamons also relied on donkeys for transportation, as indicated by the rock art at Mount Zankkra³⁶.

The Garamantes later became acquainted with horses and used them for pulling and transport. Strabo regarded horse breeding as one of the favourite pastimes of the Garamant kings³⁷. Some rock engravings in Wadi Grate depict horsemen carrying weapons, suggesting that horses were used in warfare. Similarly to oxen, one of the Libyan tribes residing near Tripoli would release their oxen at the start of a battle to fight each other, viewing the bull as a war deity³⁸. They would then send their sacred bull deity, 'Kurzil', against their enemies at the start of each battle, considering it a symbol of victory and strength³⁹.

Some sources also indicate the use of animals in medical contexts: goats and cattle were used to extract fats for ointments to treat wounds, heal skin fissures and care for animals participating in races and wrestling exhibitions. Honey was also extracted from bees, along with other medical products of animal origin.

Types of Animals Used in the Maghreb:

First: Elephants⁴⁰

Second: horses⁴¹

Third: lions⁴²

Fourth: camels⁴³

Fifth: donkeys

Sixth: monkeys

Seventh: snakes and serpents⁴⁴

Eighth: Bovine animals (bull, cow, buffalo).

There is abundant and varied evidence of the presence of bovines and their early worship by the Maghrebis. This includes poetic verses written by Corippus in the 6th century AD about the Lacantans tribe in Tripoli, whose members worshipped a bull named Gurzil, bestowing upon it a special status as a symbol of victory and strength⁴⁵.

Rock art depicting bovines can be divided into two types. The first type is simple in shape, without appendages, and examples can be found in Tazrouk and Silet. The second type features disc-like drawings, and examples can be found in the Tassili N'Ajjer and Fezzan mountains, as well as in the Ouled Nail and eastern Constantine regions⁴⁶.

Other examples of rock art indicating the ancient Maghrebis' veneration and worship of cattle can be found in the Aflal area of the Idimir, where 17.54% of the art reflects the sanctity of animals, particularly cattle⁴⁷.

Herodotus also described the cattle of the Grammataee, noting that their cows had downward-pointing horns that caused them to dig into the ground whenever they tried to move forward⁴⁸.

Ninth: Rams and goats

There is widespread agreement that numerous carvings related to rams and goats can be found in various parts of the ancient Maghreb⁴⁹. This clearly indicates the importance of these animals. However, the point of contention is whether the rams were deified as gods in their own right, or whether they were merely offered as sacrifices in specific rituals.

The Care and Treatment of Animals

Before discussing how animals were treated in ancient times, we must consider the care methods provided for them, as well as the causes of their illnesses.

Classical sources and material evidence do not specifically address the treatment of animals independently of human medicine. Often, sick animals were treated by the same physicians who treated injured soldiers. This is evident in Carthaginian camps, which offered medical services to soldiers and war animals⁵⁰.

The animals that received medical care were primarily war animals that went into battle, followed by food-producing animals that provided rich dietary sources⁵¹. Later in the Roman period, animals that offered entertainment and leisure also received care.

When we turn to the topic of animal care in ancient Maghreb, it is difficult to identify a single representative image of the methods employed. However, we can find individual examples that illustrate various types of care. For instance, the Grammata tribes made optimal use of favourable environmental conditions and took great care to increase the number of horses. They transferred water from shallow layers to their locations to water the horses and occasionally moved them to water sources, enabling them to live along the desert edges⁵². Specific stalls were designated for the constant care and breeding of horses due to their importance as a means of transport, as well as for military and recreational activities. Strabo noted the vast numbers of horses exchanged as gifts between Carthage and Mauretania and between Masinissa and the Romans, which indicates the existence of special stables for breeding horses⁵³.

In their article 'The Status of Women in Ancient Morocco', Dr Balkhair Baqqa and Sabiha Ouakel refer to Procopius, noting that Mauritanian women participated in warfare by digging trenches, setting up tents, feeding soldiers and caring for horses and camels. It is also known that the everyday roles of women within their families included milking and feeding livestock, assisting with births, treating injuries, shearing wool and spinning it⁵⁴.

Some sources state that the Severan family took various measures to ensure the safe transport of animals from Africa to Rome in good condition. For example, ostriches, gazelles and elephants were tied by their front legs with ropes to make loading them onto ships easier⁵⁵. Each type of animal was assigned cages suited to its size, level of danger, and nature⁵⁶. Regardless of the means of transport or the distance travelled, the transporter was fully responsible for the animals' safety and care. This included their food and living conditions, as well as their medical treatment and healthcare during transit.

The ancient Maghrebis saw the following factors as directly related to the deterioration of animal health:

1. Climate change in the Maghreb: This had a negative impact on vegetation cover and directly affected livestock. This led to a decline in water sources, which harmed both humans and animals. Eventually, many animal species became extinct⁵⁷.

2. Malicious spirits: They believed that animals could sacrifice themselves to protect their owners from malicious spirits, resulting in the animal falling sick. In such cases, the animal had to be disposed of to rid the owner of the spirit.

3. The influence of celestial bodies on animal health: Some astrologers and priests claimed that there was a relationship between the rising and setting of celestial bodies and the onset of diseases and epidemics affecting humans and animals alike. They warned people against going out at dawn or dusk, and prohibited herding and hunting at these times, in order to avoid attracting sickness-inducing energy⁵⁸.

4. Infection and Epidemic Spread: Although there were few methods for treating animals in ancient Maghreb, we have identified some cases indicating practices applied to animals. These include the instructions and advice of "Magon" regarding agricultural practices, particularly the necessity of castrating young bulls destined for grazing, ploughing and threshing by the age of two, with spring

being designated as the optimal time for this procedure to ensure they have the strength to perform heavy work⁵⁹.

A mural in the city of Sabratha depicts an elephant being treated with medicinal oils and herbal extracts⁶⁰. Muhammad Al-Bashir Shniti, citing Polybius, reported that Libya was filled with elephants; however, most of these elephants participated in wars and became injured or died due to a lack of specific animal treatments at that time⁶¹, not to mention the unregulated export of elephants to Rome.

Conclusion

The topic of veterinary medicine in ancient Maghreb remains one of the least explored areas. Despite the abundance of material and archaeological evidence that highlights the significant role animals played in the lives of ancient Maghrebians, little mention of this topic is found in literary sources. Animals served as sources of food and transportation, as well as being used for trade and economic exchange. They were also used for entertainment, for work and as symbols of sanctity.

The ancient Maghreb was known for its rich animal habitats, which were home to significant numbers of both domesticated and wild species. However, several factors, including environmental influences, the spread of diseases and epidemics, and injuries resulting from wars or entertainment activities, impacted the animal population, leading to the extinction of many species. Despite notable efforts to care for livestock by providing suitable food and environments, medical care was limited and did not reach the level necessary to ensure optimal treatment and maintain animal health.

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Footnotes:

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- 5- Nadia Fanoos, Egyptian archaeologist and senior archaeologist at the Egyptian Museum, Cairo. 'The Kahun Medical Papyrus is one of a collection of ancient Egyptian papyri discovered in 1889 by William Matthew Flinders Petrie. It is one of the largest medical papyri, containing various topics, including administrative and accounting matters, and is currently located at University College London. The papyrus was found near the area of Lahun'.
- 6- For more details, see Nadia Fanoos. 'The Pharaohs: The First Veterinarians in History', Sada El-Balad News, Egypt, 21 October 2018.
- 7- Joshua J'ai Marc. 'A Brief History of Veterinary Medicine.' Medical History, Soolking, 2020, p. 12.
- 8- OP-Cite, p. 22.
- 9- OP-Cite, p. 18.
- 10- The reference here is to the goddess Taneg, who symbolises fertility and protection.
- 11- Like the goddess Bastet, daughter of the sun god Ra, who symbolises tenderness and gentleness, but transforms into the vengeful goddess Sekhmet when angered.
- 12- The god Sobek represents royal power and is often associated with the strength of the Nile River.
- 13- Khnum is the primary creator god in Egyptian religion and is also considered the guardian of the Nile's sources and tributaries.
- 14- See Al-Tayyib Qadeem, 'Natural Phenomena and Animals in Pagan Beliefs of the Ancient Maghreb', *Journal of Islamic Sciences and Civilisation*, Vol. 4, No. 2, Research Centre for Islamic Sciences and Civilisation, Laghouat, Algeria, 2019, pp. 335–342.
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