

ZOOLOGICAL ANALYSIS OF THE UNICORN AS DESCRIBED BY CLASSICAL AUTHORS

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Abstract

This paper will examine the unicorn in classical sources. It will consist of the unicorn's physical description in relation to known animals, as an absolute corporeal creature. Around the time 400 B.C., the first classical record of a single-horned creature was documented by Ctesias. Classical authors succeeding him all assert that it lived in India, though other sources reference Africa and China as well. The geographical focus in this paper will be India and the adjacent regions. Though unicorns have come to be perceived as fantastic and mysterious, classical authors keep the description of this creature so precisely within the realm of possibility that modern zoological research can locate its homeland. Additionally, it is possible to identify nonfictional animals whose zoological traits may have been combined in the unicorn.

Kivonat

Tanulmányom az egyszarvúakat vizsgálja klasszikus forrásokban. Küllemük leírását más, ismert állatokhoz viszonyítja, mintha maga is hús-vér, valódi lény lenne. Az első egyszarvú lényről szóló klasszikus leírás i. e. 400 táján Ctesiasztól származik. Az őt követő klasszikus szerzők megerősítik, hogy ez a lény Indiában élt, noha előfordul utalás Afriára és Kínára is. Ez a tanulmány azonban Indiára és a környező térségekre összpontosít. Noha az egyszarvúakat képzeletbeli lényeknek tekintjük, az auctorok leírásukat annyira a lehetséges állatok sorában tartják, hogy a mai állattani kutatás képes behatárolni az előfordulási területét. Ráadásul azok a valós fajok is azonosíthatók, amelyek állattani jegyeit az egyszarvú leírásában elegyítették.

KEYWORDS: UNICORN, CLASSICAL AUTHORS, MYTHICAL ANIMALS, ZOOLOGICAL FEATURES

KULCSSZAVAK: EGYSZARVÚ, KLASSZIKUS SZERZŐK, KÉPZELT ÁLLATOK, ÁLLATTANI ISMERETŐJEGYEK

Introduction

This study will examine the description of the unicorn by classical authors as an absolute, corporeal animal. The paper will consist of the unicorn's physical analysis in relation to known animals, its importance in trade and medicinal uses, and a comparison of the unicorn to the martichora. I will limit my discussion to the descriptions offered by Ctesias, Aristotle, Pliny the Elder and Claudius Aelianus. Though each used different names for this animal (Ctesias *Indika* 45.15; Arist. *HA*, 2.1; Pliny, *NH* 8.31; Aelian *NA*, 4.21), I shall refer to it as a unicorn for the sake of consistency, with acknowledgement that this term was not coined until well after Ctesias' initial report.

Around 400 B.C., the first classical record of a single-horned creature was made by the Greek medical practitioner, Ctesias of Cnidus. Ctesias and later authors all assert that the unicorn lived in India, though others refer to Africa and China as its possible birthplace. This discussion will be confined to India and the surrounding regions (South 1987, 9).

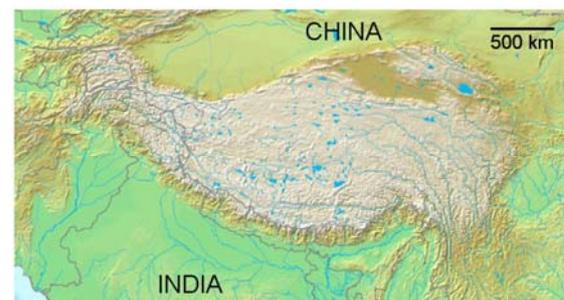


Fig. 1.: Topographic map of the Tibetan plateau (Wikimedia commons)

1. ábra: A Tibeti-Fennsík topográfiai térképe (Wikimedia commons)

According to Nichols (2011, 18-19), when Ctesias wrote about India he was specifically referring to the Indus valley and the northwest of India. Lavers (2009, 37) studied the animals described by Aelian in connection with areas that support relevant wildlife in order to further define the origin of the unicorn legend. The Tibetan plateau (**Fig. 1.**) is the only location that matches such parameters.

According to Shepard (1930, 32) the table-lands of Tibet have been believed to be the homeland of unicorns for centuries.

Classical Authors

Providing context to each author sheds light on the impact of their contribution to the legend. I will focus on Ctesias' life and work since later classical authors built on his description of the unicorn.

Ctesias, born in Caria, lived in the region now encompassed by Iran for 17 years serving King Darius II. After his employment at the Persian court, Ctesias recorded the knowledge he had accumulated in two volumes describing the Persian and Indian worlds (Shepard 1930, 26; Lavers 2009, 1-3;). Though some of his claims about India are based on native tales and religious records, others concerning plants, animals and Indian customs are accurate. Details in Ctesias' work *Indika*, were later quoted as fact by distinguished authors such as Aristotle and Megasthenes (Nichols 2011, 19, 28; Lavers 2009, 5). Ctesias never travelled to India personally, but took advantage of his position in the Persian court to glean knowledge from visitors (Nichols, 2011, 18). In the *Indika* he describes, in great detail, what is now commonly referred to as a unicorn, which he calls a 'wild ass' (Ctesias *Indika* 45.45; South, 1987, 10). In fact, it could be argued that Ctesias' description of the unicorn is more realistic than that of other animals that are proven to exist (South 1987, 4). Several traits Ctesias mentions, including the colour of the creature's coat and eyes, as well as the power attributed to its horn, continued to be referenced in later accounts. South (1987, 4) suggests that this allure is due to the idea that the animal is portrayed as a perfectly viable living creature.

Aristotle is the next significant author to mention the unicorn; he speaks of the 'Indian ass' in his work, *The History of Animals*. It is clear from his writings that Aristotle does not consider all of Ctesias' work to be dependable, however, he does not question Ctesias' account of the wild ass (Nichols 2011, 29 on Aristotle, HA). In fact, he adds clarification concerning its hooves and astragalus in comparison with other animals. The 'ankle bone' (astragalus) was commonly used in the Greek world as gaming die. The ancient Greeks did not believe this bone was found in all quadrupeds, as only the astragali from artiodactyls (having split hooves such as sheep and goats) were of a regular brick shape suitable to gaming. 'Odd-toed ungulates' (perissodactyls) such as horses, asses and rhinoceroses, have either solid-hooves or hooves that branch into an odd number. Their ankle bones are not shaped adequately for gaming, therefore, the Greeks did not recognize them to be 'proper' astragali. Ctesias believed that he had discovered an animal in the ass family that

contained an astragalus which, by the Greek description of the ankle bone, was unprecedented (Lavers 2009, 23, 25). Aristotle adds that the Indian ass had solid hooves, confirming Ctesias' assertion of what, in modern zoological terms, would be a perissodactyl with the astragalus of an artiodactyl (Nichols 2011, 29). If Ctesias had been shown an ankle bone of a rhinoceros, he would not have considered it to be an astragalus. Lavers (2009, 26) concludes that due to the size and weight of the bone described by Ctesias, it must have been a painted, weighted ox astragalus. However, if Ctesias had the zoological knowledge attributed to him by Nichols and Lavers, it seems unlikely that he would not have recognized it as an ox bone. Lavers suggests that perhaps the astragalus belonged to another animal of similar size but unknown to Ctesias, such as Indian yak.

Though he does not discuss the creature at length, Aristotle's confidence in the existence of the wild ass helped to solidify the concept of this animal, which continued into the Roman world (South 1987, 10; Lavers, 2009, 29).

Pliny the Elder (AD 23-79) the Roman encyclopaedist further contributed to the unicorn myth. According to tradition, he compiled the records of one hundred authors in *Natural History*, which impacted the minds of Europeans for over 1500 years. In this account, Pliny gives a brief exposition of a one-horned animal, a monoceros (Lavers 2009, 29-31).

The final author discussed here is Claudius Aelianus. Better known as Aelian, he was born in AD 170 in Praeneste and lived in Rome for the majority of his life. He composed most of his work in Greek. Aelian was referred to as both a sophist and a priest by Philostratus and the *Suda* lexicon respectively (Hekster 2002, 365). Aelian refers to the one-horned creature as a 'cartazonus' in his work, *De natura animalium*, drawing strongly from Ctesias' report (South 1987, 11; Aelian NA, 4.21). Much of his inspiration resulted from the Plinian tradition as well (Lavers 2009, 33). Though two of the three passages Aelian dedicates to the 'cartazonus' appear to have been a direct adaptations from Ctesias, Aelian includes additional information in the third passage not alluded to by his predecessors (Lavers 2009, 31; Aelian NA, 4.21). It should be noted, however, that Aelian often modified some of his information in order to keep his audience engrossed in the story (Foggen 2009, 50; Hekster 2002, 366). Therefore, caution is due when reviewing Aelian's writing.

The sum of these reports is as follows: Ctesias describes the unicorn' as an animal with a white body, red head, blue eyes, bile in the liver, and bitter flesh. He states that the horn possesses medicinal properties, and that the ankle-bone

(astraglos) is similar to that of an ox (Ctesias Indika 45.45). Aristotle agrees, and notes that the unicorn is the only creature to have solid-hooves and a huckle-bone (astragalos) (Arist. HA, 2.1). Pliny the Elder adds a description of the tail and a “deep lowing” voice which Ctesias and Aristotle did not mention (Pliny, NH 8.31). Aelian agrees with Pliny’s report of the tail, writes that the unicorn possesses a loud voice adding an account of the interactions between members of this species (Aelian NA, 4.21). All four writers agree that the animal is the size of a horse, has a long black horn in the middle of its forehead (though Ctesias mentions red and white as well), large, solid hooves and that the adults cannot be captured alive.

Precision of the physical description of the unicorn

The illustrations by classical authors were convincing due to specific details that were variations of stereotypical features of animals familiar to the classical world. These include Ctesias’ record of the ‘ankle bone’ known to exist in animals such as sheep and goats, but dissimilar to those of horses, asses and rhinoceroses. Ctesias also observes that the unicorn had ‘gall’ (bile), which was unheard of in asses (Ctesias, Indika 45.45). In Equines the bile is created directly in the liver itself. Because no gall bladder can be found in horses and asses, the assumption made by Ctesias is that they had no gall. However, while all other equines known to Ctesias lacked this piece of anatomy, the wild ass of India had it (Lavers 2009, 26).

Classical authors also emphasized that this creature had solid hooves. Cloven vs. solid hooves appear to have been of importance to ancient authors as three of the four made specific mention of the beast possessing solid hooves. Aristotle found only the feet of this animal worthy of mention, comparing it with an oryx which also has a single horn but cloven hooves (South 1987, 10 on Aristotle, HA, 2.1). Aelian (NA, 4.21) relates the male’s shifting behavior during rutting, explaining that while he is typically hostile with other members of its species, on this occasion it will suppress this aspect of its nature. He grazes peacefully by females in order to get close to one with which to mate, the reverts to his antisocial behaviour once she is impregnated. Aelian also comments on the female’s characteristics, noting her subservient nature and her position as sole caretaker of the offspring (South 1987, 12). Though it may be inferred from Ctesias’ report that the males guarded their young (the habit exploited by hunters to approach the creature to kill), it is possible that he referred to mothers who sacrificed themselves to protect their young. Aelian thus reinforces the idea that the unicorn is a plausible creature by creating an

impression of refined interactions within the species.

A comparison between the four classical authors shows that with each additional account the descriptions become clearer and more detailed. Ctesias starts with a basic explanation upon which the others elaborate. Each author builds onto previous information with additional details, none of which are particularly exotic (other than the horn; however, the rhinoceros horn is also said to possess miraculous powers). Though not every description is necessarily referenced by the other authors, these reports do not contradict one another, but rather fit congruously with the features thus accumulated. The combined works integrate features of the unicorn crucial to the legend: the impossibility of capturing it, the medical power of the horn, and solitary nature (South 1987, 12). If Ctesias’ description was imaginary, the attributes added by succeeding authors were also imaginary. Lavers (2009, 28) writes, “[i]n other words, perhaps descriptions of the creature became not more imaginative over time, but more accurate, more sensible, more reflective of the animals and landscapes that gave birth to the myth in the first place...”. On the other hand, if this creature was founded in reality, then subsequent authors could have discovered additional information resulting in more detailed accounts.

Possible faunal inspiration for the unicorn

The unicorn’s similarity to the physical features of known animals is another basis for it becoming a plausible creature. Not only do authors portray the unicorn as having similar features to other animals in the same region, but specifically note this likeness several times, emphasizing that these creatures were not the same species.

South (1987, 9) asserts that the idea of the unicorn was a union of fact and myth. He believes this creature was founded in the descriptions of real animals, joined together with mythical stories resulting in a single creature. According to South (1987, 11), Pliny’s description is a conglomeration of more animals than was Ctesias’. Shepard (1930, 28) likewise believes that Ctesias unwittingly combined at least two animals in his narrative, and likens Ctesias to a child uniting two dissimilar creatures into one fanciful animal with attributes of both, which cannot be classified as either. Ctesias might have conflated two or more animals, it is likely however, that reports on several animals were mixed before reaching the physician. Lavers (2009, 21) suggests that the idea of a one-horned ass began with the Himalayan peoples, and as it moved from the Tibetan plateau to Persia, the creature picked up additional traits.



Fig. 2.: Indian rhinoceros (Darren Swim, detail, Wikimedia commons)

2. ábra: Indiai rinocérosz (Darren Swim, részlet, Wikimedia commons)

He believes that the unicorn was a combination of the chiru, the wild yak, and the kiang, though Shepard (1987, 28, 31, 32) maintains that the Indian rhinoceros, the onager and the antelope were the inspiration for this creature.

Working from a basic description of the unicorn (a single horn, elephant-like feet, with massive strength and speed) the most obvious source animal is the Indian rhinoceros (*Rhinoceros unicornis* Linnaeus, 1758; **Fig. 2.**). In fact, this animal is the only known quadruped to bear a single horn (Perseus Online commentary on Pliny the Elder's NH 8.13). Shepard (1930, 28) believes that the Indian rhinoceros is the basis for Ctesias' wild ass due to the pharmaceutical powers attributed to its horn. While the belief that the rhinoceros horn has alexipharmic abilities is widespread, the fact that Ctesias specifies its placement on the forehead as opposed to the nose creates room for doubt (Suhr 1964, 102). Pliny later speaks of the rhinoceros in a separate section, which implies that he considered the two to be different (Pliny the Elder, NH, 8.29). Lavers (2009, 33) suggests that the unicorn reported by Aelian was similar to a rhinoceros in the description of the feet, tail, and strength. Aelian, however, stressed that the creature was definitely not a rhinoceros due to the fact that the rhinoceros's horn was located on its nose as opposed to its forehead, and because a description of a rhinoceros would have been easily identifiable to a Greek or Roman, due to their popularity in the Roman arena. The wild yak (*Bos mutus* Przewalski, 1883) found on the Tibetan plateau may have inspired features of the unicorn.



Fig. 3.: Chiru (detail, People's Daily)

3. ábra: Tibeti antilop vagy csiru (részlet, People's Daily)

The size and geographic distribution of this creature are sufficient to explain its inclusion in the unicorn triad (Lavers 2009, 19).

The Tibetan antelope, the chiru (*Pantholops hodgsonii* Abel, 1826), is also believed to have influenced the description of the unicorn by supplying characteristics such as its personality and length as well as colour qualities of the horn. The horns are close to 50 cm long and when observed from the side they appear to be a single horn (**Fig. 3.**). Because the chiru are shy, it is difficult to come close enough to the animals see them well. Due to these combined traits, Lavers (2009, 12-13) believes that the chiru was the inspiration for the unicorn. Chiru horns were greatly sought after and were sold as pilgrimage items and Mongols used the rings of this horn in fortune telling (Lavers 2009, 34-35). Currently, natives claim that these horns possess medical powers. It is possible that horns sold individually in order to increase profit, propagated the idea of a creature with a single horn (Lavers 2009, 12-13). However, it should be noted that Pliny also mentions the antelope, reporting that it has cloven feet and a single horn, which he explicitly differentiates from his description of the unicorn (South 1987, 11).

Shepard (1987, 31) believes that the onager or Persian ass (*Equus hemionus* Pallas, 1775) was a member of the unicorn triad as its coat comprises of the red and white colors that may have influenced the descriptions given by Ctesias and Aelian.



Fig. 4.: Kiang (Bodlina, detail, Wikimedia commons)

4. ábra: Kiang (Bodlina, részlet, Wikimedia commons)

The onager's underside is light grey, which could have been interpreted as white, while the fur on the back is a reddish hue. South (1987, 10) warns however, that the onager, widely known in Persia, would have been familiar to Ctesias. Lavers (2009, 15) counters Shepard's assertion that the onager helped inspire the unicorn by suggesting the kiang (*Equus kiang* Moorcroft, 1841). The kiang is the most sizable known wild ass, reaching withers heights of 1.32 to 1.42 m and approximately 2.1 m in length; this may account for the unicorn's similarity in size to a horse observed by the classical authors. The summer coloring of the kiang with a prominent red and white coat also evokes that of the unicorn (Fig. 4.). This animal has proven untamable, if hunters are able to capture it at all. If the kiang spots a horseman prior to the ambush, it can easily outdistance him (Lavers 2009, 18).

Lavers (2009, 19) concludes that the unicorn was a combination of the kiang, a chiru and possibly a large bovine creature such as a yak. The kiang provided the colour, speed, and character attributed to the unicorn while the chiru contributed the long, black horn with medicinal traits. In order to explain the elephant-like feet and massive strength of the unicorn, Lavers suggests the wild yak as an influence, due to its size and propensity to graze near herds of kiangs and chiru.

Use in trade

Unicorn as a real creature occupied people's imagination for centuries. This was due not only to its juxtaposition with known animals but also its role in the economic system. The trade network, built on the idea of the horn's pharmaceutical

powers first introduced to the Greek world by Ctesias and Aelian, founded this influence. Using a 'unicorn horn' as a drinking vessel was greatly desired amongst nobility for its miraculous ability to counteract poison and certain convulsive illnesses (South 1987, 11). Merchants may have elaborated upon this belief in order to sell 'unicorn horns' (the actual substance that they sold, whether chiru horns or other material is unknown) at a high price (Nichols 2011, 24). This belief was so widespread that it persisted through the classical period into the Middle Ages, gaining an increasingly detailed description. According to Medieval legend, the horn would perspire if poison was close by, and when placed into the horn, the liquid would bubble. The horn was also believed to counteract poison even after ingested and later developed into what South (1987, 18-19) describes as a 'general cure-all', increasing the value of the horn substantially as a multi-purpose antidote. In the Renaissance period it was common for merchants to sell a piece of elephant tusk or narwhal tooth for a large sum of money passing it off as a unicorn horn. Though this period is well outside of the parameters of my research in this essay, the belief in the unicorn's existence and medical uses stemmed from the classical period which carried on through the Middle Ages and Renaissance, impacting European economy for centuries.

Unicorn vs. the Martichora

Finally, the complex logic behind the portrayal of the unicorn as a non-fictional animal can be studied in comparison to perceptions of the martichora, another fantastic creature recorded by Ctesias, Aristotle, Pliny, and Aelian. Ctesias describes the martichora as a grotesque creature composed of "...a human face, is the size of a lion, and is red like cinnebar. It has three rows of teeth, human ears and light blue eyes like a man's. It has a tail like a land scorpion on which there is a stinger more than a cubit long" (Ctesias, Indika 45.15). Ctesias claims that he beheld a live martichora, albeit a youth (Nichols 2011, 23 on Ctesias, Indika 45.15). As far back as the classical period, authors doubted the literal description of the martichora recorded by Ctesias. In fact, though Aristotle, Aelian, and Pliny each mentioned Ctesias as their source for the martichora, and Pliny alone did not feel the need to question the validity of Ctesias' claim in his report (Perseus Online 2013, accessed 15/03/13). However, Pliny's lack of doubt may be explained by his mentioning another source in addition to Ctesias - Juba (Pliny NH 8.45). The fact that ancient authors, such as Aristotle and Aelian, credited Ctesias as reliable in reference to the wild ass but also stated doubt concerning his description of the martichora, suggests that other sources

attested to the existence of the wild ass, but not the martichora.

In contrast to the various theories of animals contributing to the inspiration of the unicorn over the years, the martichora has, since the classical period, been believed to be an imaginative exaggeration of a single animal, the tiger (Nichols 2011, 105). The scorpion stinger was likely a reference to the dermal protrusion (similar to a nail) on the end of a tiger's tail. The idea of three rows of teeth may come from the three loges found in the tiger's carnivorous molar tooth. Though Ctesias claimed to have seen the beast himself, he does not mention how near he came to the creature, or how good the light was at the time. It is possible that he observed the animal personally, but did not get a clear view of it and merely recorded the more fantastic claims of his informant, such as the beast having the face of a man and being able to shoot stingers from its tail as an adult (Nichols 2011, 105). Native Indian hunters remove the tiger's whiskers from the hide, believing that they are dangerous even after the tiger is dead.

The authors write about the martichora almost identically, whereas the unicorn's description alters between writers. These differences are not significant enough to consider the accounts to have been of separate species, but rather indicate that various sources observed different animals of the same species and discerned varying attributes in them. It should be noted, however, that small variations do occur in the classical records of the martichora, such as additions concerning its voice and speed by Aristotle, whose description was then followed by the succeeding authors. Considering that all but one author claimed only Ctesias as their source, it is plausible that Ctesias originally wrote of the creature's voice and speed, but this account was lost after having been copied by his successors.

Conclusion

Though many aspects of the unicorn have come to be considered fictional, classical authors kept the original description precisely within the realm of possibility. Contemporary research can thus locate the homeland of this creature. Additionally, scholars are able to identify which nonfictional animals could be combined to produce the unicorn. "The one-horned ass might have ended up 10 m tall with a polka-dot hide and a horn made of gold; it might have come to share its landscape with dragons and satyrs. But in 600 years nothing outrageous was added to the myth..." (Lavers 2009, 42-43). Classical authors describe the unicorn in careful zoological detail, noting not only its similarities and differences to the outward

appearance of other animals, but also its unusual anatomical composition. Merchants recognized the impact that the idea of the unicorn had, and utilized the concept of the horn's medical powers for trade that flourished for centuries. The description of the unicorn differs significantly from that of other fantastic creatures such as the martichora. In contrast to classical descriptions of the unicorn, Aristotle and Aelian add little to Ctesias' original record of the martichora, while expressing their own doubts as to the existence of the creature. The combination of these factors leads to the conclusion that classical authors exercised great care in documenting the unicorn as an actual, corporeal animal.

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