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Introduction

Cleopatra had been the source of mystery and intrigue throughout her life. It is imperative to remember that Cleopatra was a real human being while studying her life and, most ironically, her death. Her mythical status has been embellished throughout the past two thousand years by the numerous writers, historians, artists, and actors who have studied her life. These individuals have created a certain image of Cleopatra in the public's consciousness which differs greatly from the once flesh-and-blood Queen of Egypt. It is of particular importance in examining her death to avoid the snares set by some of the most masterful authors (William Shakespeare), gifted artists (Guido Cagnacci) and talented actresses (Elizabeth Taylor). These are merely artistic renderings, albeit masterful ones, of what might have occurred at the scene of her death. One must remember that there are no eyewitnesses to the death of Cleopatra and her two handmaidens. There are many aspects of Cleopatra's death which are unknown. Therefore, individuals ranging from historians of Cleopatra's time to artists and actors of modern times have speculated as to what they think might have occurred. In analyzing the details surrounding Cleopatra's death, one must not confuse the known facts from pure speculation or legend. The most widely accepted theory of Cleopatra's death is that she committed suicide by an asp- specifically, the Egyptian Cobra. This theory has been promulgated throughout the past two millenia. This paper will analyze the feasibility of such a theory by relying on the known facts- both historical and medical. I will attempt to conclude whether the legend of Cleopatra's death by an asp has any medical and scientific plausibility or if it is merely the product of many creative imaginations throughout the years.

Cleopatra VII Thea Philopator

Cleopatra has become, through the ages, a symbol of mystery and intrigue. Cleopatra, the visceral Queen of Egypt, has become interwoven with the Cleopatra of legend. Today, Cleopatra is best remembered for her unparalleled beauty, her tragic romance with Mark Antony, and her untimely death. But how much

do historians actually know today about the true incarnation of Cleopatra who ruled Egypt, the richest nation in the Mediterranean world and the last to remain independent of Rome (3)? Cleopatra was born in 69 B.C. in Alexandria, Egypt. Her father was King Ptolemy XII Auletes. Her mother's identity is still a mystery. Leading theories speculate that Cleopatra's mother was either the King's sister, Cleopatra V Tryphaena, or one of his concubines (4). We do know that Cleopatra was Macedonian Greek and the last in a royal line that began with Ptolemy who was Alexander the Great's childhood friend and a commander of his eastern military campaign (5). Contrary to most popular images, Plutarch has written that Cleopatra was not very attractive (1) but, she was very cultured, charming, multilingual and a beautiful singer (6). Cleopatra spoke the Egyptian language. Most observers would assume the Queen of Egypt would have been able to speak the Egyptian language. However, her forbears spoke Greek and observed Greek customs while being the rulers of Egypt (3). A coin dated 32 B.C. was recently discovered. It bears a portrait of Cleopatra who is depicted as having a large nose, narrow lips, and a sharp chin (3). At the age of 18 Cleopatra was married to her 10-year-old brother Ptolemy XIII who jointly ruled Egypt with her (6). She would fight for power against him. She then seduced a married Julius Caesar and bore him a son, Ptolemy XV also known as Caesarion. Caesar returned Cleopatra to her throne. She married once again. This time to her youngest brother Ptolemy XIV. In 42 B.C. a romantic and political relationship developed between Cleopatra and Mark Antony. After losing a one-sided battle against Octavian and thinking that Cleopatra had betrayed him, Mark Antony, fatally wounded himself (2). Cleopatra attempted to negotiate with Octavian a promise of the throne for her children. Octavian never made any assurances on this point (7). Cleopatra remained locked in her mausoleum during her last few days. Two handmaidens and possibly a eunuch were with her at the time of her death. Cleopatra was found dead by Octavian and his men.

The missing facts surrounding Cleopatra's death has conjured many romantic images. It is imperative to note, when analyzing the cause of Cleopatra's death, that extremely little is known of the details and what little that is known probably originates from

Octavian's recollections. The children of Cleopatra were treated sympathetically by the Romans after her death except for one child whom the Romans had killed. That child was Caesarion- son of Cleopatra and Julius Caesar (6).

Naja haje

The Egyptian cobra (*Naja haje*) held a special position in Egypt. The uraeus depicts the Egyptian cobra and is worn in front of the king's headdress. The Egyptian cobra of the uraeus represented the goddess Wadjet who was associated with the Lower Egyptian sanctuary of Buto. Wadjet was seen to be the mythical mother and midwife of the king (8). Even rural farmers have looked on the presence of cobras as a mixed blessing. They have been known to kill humans while also ridding the peasant farmers of rodents that have the potential to ruin their crops and food stores (3). The Egyptian cobra is large and heavy-bodied (9). It has a maximum length of 9.8 feet and is the largest of all the *Naja* species (10). This is of particular significance as the snake or snakes which have been implicated in the deaths of Cleopatra and her handmaidens were purported to have been delivered to her concealed in a basket of figs. Ergo, one must question the veracity of the legend as it is seemingly implausible for some rural deliveryman to pass the guards with a basket (or a water jug as the conveyance vehicle has been alternatively posited) filled with enough of these large and heavy-bodied snakes to kill three adults. The Egyptian cobra's venom is a neurotoxic agent and is much stronger than the venom of the common cobra. Its venom contains lecithinase which is an enzyme that dissolves cell walls and membranes surrounding viruses. For this reason, medical researchers have been using the venom of the Egyptian cobra for years (8). *Naja haje* venom is composed of three disulphide-linked polypeptide chains (11). The immobilization of potential prey and predator species is the biological function of the snake venom neurotoxin (12). It has been demonstrated that the venom of *Naja haje* significantly alters the arterial blood pressure and the electrical activity of the cardiac muscles in envenomated rats leading to the suggestion that an impairment of the electrical cardiac muscle may be the mechanism of death of the Egyptian cobra's victim (13).

The Egyptian cobra has a very distinctive pose when threatened- the front part of its body is raised, its neck is spread into a hood and dark bars are displayed on its throat and the front of its hood (9).

An Analysis of the various theories

An analysis of any proposed theory of the nature of Cleopatra's death would be incomplete without an examination of all possible alternate theories. In the death of Cleopatra, it is natural that there would be multiple theories. There were, supposedly, no surviving witnesses to Cleopatra's death. No implement of death was ever recovered. In such a death as Cleopatra's it is to be expected that there would be multiple theories set forth surrounding her demise. From the evidence, I surmise that there are only three possible theories that have any form of legitimacy. They are the following: 1) Cleopatra committed suicide by poison hidden somewhere in her mausoleum; 2) Cleopatra committed suicide by the venom of the Egyptian cobra and 3) Cleopatra was murdered by means of poisoning by Octavian and his men. It is safe to conclude that Cleopatra died by one of these three scenarios. One must remember that there are no primary written accounts of the death scene and that most of what is known of the events surrounding Cleopatra's death came from Octavian who must be considered a suspect in the Queen's death. The oldest source of information is from Strabo who was alive at the time of the death. He stated that he was not sure whether she had been murdered or had poisoned herself but, that there were two stories surrounding her death- one revolved around a toxic ointment while the other focused on the bite of an asp (14). Cleopatra's personal physician, Olympus, theorized that she either died from the bite of an asp or by applying a poisonous ointment (15) while Galen theorized that she broke the skin by deeply biting her own arm (16). The Egyptians had studied various poisons for many generations and were thus familiar with which poisons might provide a relatively comfortable death while not inflicting much outward trauma on the descendant's body. This would lend credence to theories of either murder or suicide by poison. Death by the bite of a cobra would be the most poetic means of death considering the cobra was sacred to the goddess Isis of whom Cleopatra felt herself to be the physical incarnation (15). However, one must analyze only the historical and medical facts. Firstly, if death came from the bite of one of a variety of North African adders- *Cerastes vipera* (Cleopatra's Asp), *Vipera berus*, *Vipera aspis*, or *Cerastus Cornutus*- there would be considerable pain and swelling of the victim's body. This supposedly was not the case. There were no significant bite marks

present (6). However, if the serpentine culprit was *Naja haje*, the theory of suicide by means of a snake bite becomes slightly more plausible as its venom is extremely toxic and can lead to a very rapid death (10) with an inconspicuous bite mark (6). The plausibility of this theory declines rapidly when it is examined further. It would take an extremely large cobra (or two or three) to kill three women and possibly one eunuch in rapid fashion. These snakes could not have been hidden in a small basket of figs or a water jug as has been put forth by historians. Octavian and his men rushed to Cleopatra after learning of her "suicide plans" however even they did not find even one of these necessarily large cobras. Also, after forcing this enraged cobra to bite herself, would an envenomated Cleopatra be physically and/or emotionally capable of handing over the serpent to her handmaiden who would have to grasp the snake and after receiving her own mortal bite hand it over, in turn, to the other handmaiden. This scenario does not seem plausible even though an Egyptian cobra is capable of inflicting a quick death with inconspicuous marks. Also, one must question where did these necessarily large snake or snakes so quickly disappear as Octavian and his men supposedly rushed to Cleopatra's windowless and sealed mausoleum so rapidly that the handmaiden, Charmian, was still alive.

The spreading of the word that there were puncture marks on Cleopatra's body was meant to mask the actual cause of death. Octavian needed to rid himself of Cleopatra and her political threat. An injection of one of various possible poisons would have provided a quick and relatively atraumatic death. If she and her handmaidens had committed suicide, Octavian's men would have found some remnants of the poison and an instrument to apply such a fatal poison. Nothing was found as Octavian's men obviously took the remaining poison and instruments with them after murdering the three women. Octavian had both the motive, to permanently remove the powerful political threat of Cleopatra, and the ability to murder Cleopatra. This proposed motive is confirmed by the subsequent murder of the politically threatening child, Caesarion, of Cleopatra and Julius Caesar.

Conclusion

The legendary theory of Cleopatra's death being the result of suicide by an asp is implausible for a multitude of reasons when analyzed in a scientific and medical manner. The reality of the major aspects of Cleopatra's life differ dramatically from the more poetic versions that legend has created. She was not

the captivating beauty but, rather, a shrewd and intelligent political power. She had many romantic and/or sexual relationships with various men including, most significantly, Julius Caesar, rather than solely Mark Antony. In turn, her death should not be viewed as the ill-fated end to her tragic romantic relationship with Mark Antony. Rather, the facts clearly point to murder rather than suicide- murder at the hands of Octavian and his men for political purposes.

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