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Cicero discovering the tomb of Archimedes, by Pierre-Henri de Valenciennes, 1787 / photo public domain at Wikimedia Commons

ANCIENT ROME

When Cicero found Archimedes' tomb in Syracuse.



by **Guillermo Carvajal**

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Archimedes was probably the greatest mathematician of antiquity. He was born in the Sicilian city of Syracuse in 287 B.C., then an independent Greek colony. It is surprising how little we know about him and his life, as well as the oblivion into which he fell a few years after his death.

It is known that his friend Heraclides wrote a biography of him, but no copy has reached our days. All that is known is what the Byzantine historian John Tzetzes wrote about him in the 12th century. On the other hand, about ten of his works have been preserved. Seven others are known only by references by other authors.



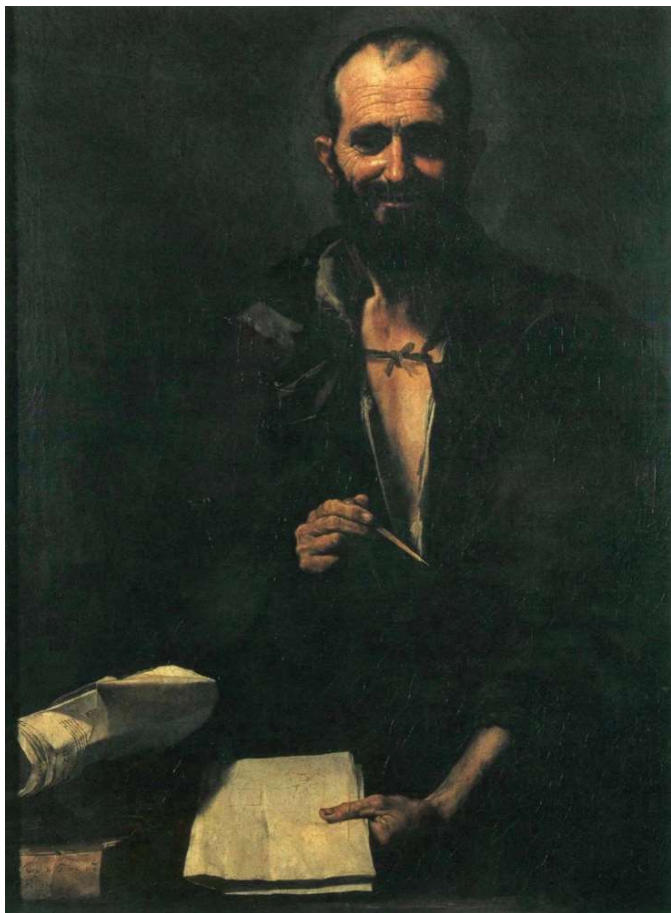
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He could have studied in Alexandria with his contemporaries Conon of Samos and Eratosthenes, as Diodorus Siculus states. The fact is that the former is explicitly mentioned as a friend in *On the Sphere Cylinder*, and two of his other works are dedicated to Eratosthenes.

During the Second Punic War, when Roman legions besieged his city, Archimedes developed a series of defensive artifacts, as told by historians Polibius, Plutarch and Titus Livius.

And an undertaking begun with so vigorous an assault would have met with success if one man had not been at Syracuse at that time. It was Archimedes, an unrivalled observer of the heavens and the stars, more remarkable, however, as inventor and contriver of artillery and engines of war, by which with the least pains he frustrated whatever the enemy undertook with vast efforts

Titus Livius, *The History of Rome* XXIV.34



Archimedes, painting by José de Ribera, 1630 / photo public domain – Museo del Prado

take considerable water.

Titus Livius, *The History of Rome* XXIV.34

It is in this same scenario where the legend of his use of mirrors to set fire to enemy ships arised, although possibly what he used was Greek fire. Roman historians were amazed at some of his fascinating inventions:

As for the ships which came closer, in order to be inside the range of his artillery, against these an iron grapnel, fastened to a stout chain, would be thrown on to the bow by means of a swing-beam projecting over the wall. When this sprung backward to the ground owing to the shifting of a heavy leaden weight, it would set the ship on its stern, bow in air. Then, suddenly released, it would dash the ship, falling, as it were, from the wall, into the sea, to the great alarm of the sailors, and with the result that, even if she fell upright, she would



Archimedes' mirrors in a fresco in the Uffizzi Gallery, painted by Giulio Parigi in 1600 / photo [public Domain on Wikimedia Commons](#)

His fame was such that the Roman general in charge of the assault, Marco Claudio Marcelo, had given the order to respect his life once the city was taken.

As it is known his inventions were not enough to resist Rome, and the city was taken in 212 B.C. Archimedes found death at the hands of a soldier, although there are several versions of the fact and, of course, more legendary additions came later.



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Plutarch quotes up to three different versions, according to which: either he was working with a mathematical diagram when required by the soldier to accompany him, and when he refused or ignored him, the soldier pierced him with his sword; or he was going to surrender carrying some of his mathematical instruments and the soldier, thinking that they should be valuable, killed him to steal them.

While many shameful examples of anger and many of greed were being given, the tradition is that Archimedes, in all the uproar which the alarm of a captured city could produce in the midst of plundering soldiers dashing about, was intent upon the figures which he had traced in the dust and was slain by a soldier, not knowing who he was; that Marcellus was grieved at this, and his burial duly provided for; and that his name and memory were an honour and a protection to his relatives, search even being made for them

Titus Livius, *The History of Rome* XXV.31

According to legend, not mentioned by ancient sources, Archimedes' last words would have been *Noli turbare circulos meos* (Don't disturb my circles). There is no documentary proof of this. But there is evidence of how he wanted his sepulchre to be:

And although he made many excellent discoveries, he is said to have asked his kinsmen and friends to place over the grave where he should be buried a cylinder enclosing a sphere, with an inscription giving the proportion by which the containing solid exceeds the contained

Plutarch, *Marcellus* 17.7



The Death of Archimedes, by Thomas DeGeorge, 1815 / photo [public Domain on Wikimedia Commons](#)

Archimedes considered that the greatest of his mathematical discoveries was the demonstration that the volume and the area of the sphere are two thirds of those of the cylinder in which it is inscribed.

Marcellus arranged the burial of Archimedes in his family tomb, with the assistance of the main citizens of Syracuse and the legions:

And Marcellus, immediately upon learning this, lamented, And illustriously buried this man in the paternal tombs, In the company of the best of the citizens and all of the Romans; But the killer of Archimedes, I think, Marcellus kills with an axe

John Tzetzes, *Book of Histories* II-145

Over time, Archimedes' work and the details of his life were forgotten. Polybius, which is the source taken by Plutarch and Titus Livius, is probably the first to mention the seizure of Syracuse and the death of the mathematician, but he wrote about 70 years after the events.

In 75 B.C., some 137 years after Archimedes' death, Cicero was appointed quaestor in Lilibea, Sicily. Having heard in Rome about the verses inscribed on the tomb, he asked the Siracusans where it was located. They replied that they knew nothing about it and doubted that both the man and his tomb had existed.

Now, I will not compare with the life of this [Dionysus of Syracuse], which is the most horrible, miserable and detestable I can imagine, the lives of Plato or Arquitas, learned and clearly wise men; I will bring out from the arena where he worked with his compass a humble little man from that same city, who lived many years later, Archimedes.

Cicero, *Tusculanae Disputationes* V, XXIII–64



Cicero discovering the tomb of Archimedes, painting by Benjamin West, 1804 / photo [public Domain on Wikimedia Commons](#)

Cicero, unconvinced by the ignorance of the Siracusans, began the search on his own. Near the door of Agrigento, a place where there seemed to be many ancient tombs, he noticed a small column hidden in the undergrowth. After slightly clearing the area, the sphere and the cylinder appeared before him.

When I was a quaestor, I discovered his tomb, ignored by the Siracusans, for they categorically denied his existence, surrounded everywhere and covered with Bushes. I

remembered, in fact, some modest senaries which, according to tradition, had been inscribed in his tomb and which clearly stated that a sphere with a cylinder had been placed at the top of it. One day when I was looking all over the land, because there are a great number of tombs next to the door of Agrigento, I noticed a small column that did not protrude much from the undergrowth, on which there were represented the figure of a sphere and a cylinder. And I immediately told the Siracusians, some of whose elders went with me, that in my opinion that was what I was looking for.

Cicero, *Tusculanae Disputationes* V, XXIII–64,65

Immediately he had the place they had been neglecting for so long cleaned, reproaching them for forgetting their most illustrious citizen.

Many men were sent with sickles that cleaned and made the place accessible. When they opened an entrance, we approached the front face of the base. There was an epigram with the verses erased at the end, almost halved. Thus the noblest city of Greece, once even the most learned, would have ignored the tomb of its most brilliant citizen, if it had not been shown to them by a man from Arpino.

Cicero, *Tusculanae Disputationes* V, XXIII–65,66

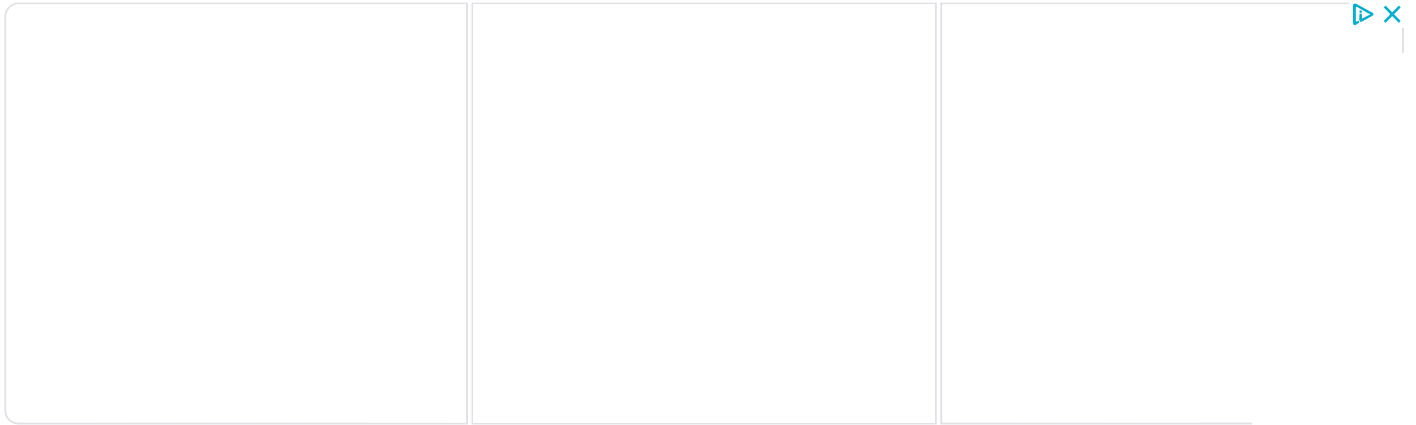
As George F. Simmons states in his book *Calculus Gems: Brief Lives and Memorable Mathematics*, published in 1992: *The Romans had so little interest in mathematics that Cicero's act of respect in cleaning Archimedes' tomb was perhaps the most memorable contribution of a Roman to the history of mathematics.*



Cicero discovering the tomb of Archimedes, by Francesco Zuccarelli, 1747 / photo [public Domain on Wikimedia Commons](#)

It is possible that the tomb remained intact for many years after Cicero's discovery, but its location and possibly the identity of its illustrious inhabitant fell back into oblivion, perhaps sometime between the 4th and 5th centuries A.D. or even earlier.

From 18th century onwards many painters produced works on the theme of the Ciceronian discovery, taking as a reference for the representation of the tomb one of the graves still existing in the necropolis of Groticelli in Syracuse. This tomb is today a place of pilgrimage, and even has tourist indications that identify it as the *tomb of Archimedes*. However, archaeological studies consider it to be of Roman origin dating back 200 years after the mathematician's death.



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At the beginning of 1960s the construction of the current Hotel Panorama began at 33 Necropoli Grotticelle Street in the city. During the works a tomb was found, which can still be seen in one of the courtyards of the hotel. Some experts believe that this is the tomb of Archimedes, while others are inclined to assign it to Agathocles, tyrant of Syracuse between 317 and 289 BC. There is no trace of the column, the sphere and the cylinder.

This article was first published on our Spanish Edition on September 22, 2018. Puedes leer la versión en español en [Cuando Cicerón encontró la tumba de Arquímedes en Siracusa](#)

Sources

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