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*Archimedes and the Roman Imagination* by Mary Jaeger

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*Reviewed by*

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Jaeger's recent book, *Archimedes and the Roman Imagination*, is not so much about Archimedes himself as about the Roman Archimedeses as they emerge from the works of Polybius, Cicero, Vitruvius, Plutarch, and others. Jaeger explores the most famous stories about Archimedes, like the ones about his 'Eureka!' and the planetarium, puts them in their context, and draws new conclusions.

The book is divided into three parts: the first is assigned three chapters; the second, two; and the third, one. The first part deals with the creation of Archimedes as a figure embodying ideas of invention and transmission. In chapter 1, Jaeger examines the most famous story about Archimedes in which the great mathematician leaps from his bath crying 'Εὕρηκα!' Hieron II, ruler of Syracuse, had commissioned a gold crown as an offering to the gods, but was suspicious of the material that the craftsman had used to make it: was it only gold, as expected, or gold and silver? Hieron turned the problem over to Archimedes and the latter uncovered the fraud while immersing himself in a bath. He had discovered something akin to the principle of specific gravity. Jaeger brings to light details of this story that have been forgotten and makes interesting remarks about the meaning for Roman authors of Archimedes' naked body and his running in public while crying 'I have found [it]! I have found [it]!'. For Jaeger, the 'Archimedes' that emerges from this analysis is a *topos* for discovery, a figure of an intellectual athlete as well as a mocked slave.

Chapter 2 deals mainly with Cicero's *Tusculan Disputations*. On a first level, Jaeger explores the place of Archimedes in this dialogue as a figure that brings together two cultures. On a second level, she

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goes into the role of Cicero in Archimedes' story. Cicero, by rediscovering Archimedes' tomb and by writing about it, becomes part of Archimedes' story and the tomb becomes emblematic of Cicero's appropriation of Greek learning for Rome. Jaeger highlights, then, the central role of Cicero in this story as an *exemplum* and comments on issues of invention, discovery, memory, death, and the immortality of the soul.

Chapter 3 examines the passage in Cicero's *De republica* where we learn that after sacking Syracuse, Marcellus took with him two spheres: a solid sphere, an old invention reproduced by Archimedes, and a mechanical sphere, Archimedes' own invention. Jaeger argues that the two spheres act as an extended metaphor for the transfer of Greek cultural capital to Rome and for the 'Roman appropriation of Greek cultural capital as both inheritance and rediscovery' [68].

The coda of the book's first part is devoted to the reception and rereading of Cicero's account of the spheres in the *Mathesis*, a fourth-century astrological treatise by Julius Firmicus Maternus. In this treatise, Firmicus argues first that the spheres serve the same role as in Cicero's dialogue and, second, that later writers in general imitate Cicero's manner of using the spheres rather than the description of the spheres themselves.

In the second part of the volume, Jaeger explores the figure of Archimedes as it relates to that of Marcellus, starting in chapter 4 with the various accounts of Archimedes' death. After sacking Syracuse, Marcellus ordered the troops not to kill Archimedes; but a Roman soldier, who did not recognize the scientist, killed him while Archimedes was drawing some diagrams. By focusing in particular on Archimedes' killer, Jaeger shows how Roman authors tried to mitigate the political problem for Marcellus posed by Archimedes' murder by taking the emphasis off Archimedes' death and bringing forth Marcellus' grief. Thus, Cicero omits to mention the killer; Livy and Valerius say that he did not know who Archimedes was and blame Archimedes' own character for his death; Pliny blames the soldier's thoughtlessness; and Plutarch says that Marcellus later shunned him as if he were polluted. No one mentions the Roman soldier by name or describes the death either completely or directly. In effect, the anonymity of the Roman soldier, according to Jaeger, keeps Marcellus from being directly responsible for the killing and so Archimedes'

death comes to symbolize the end of old Syracuse and the beginning of a city that belongs to Rome.

Jaeger continues her analysis in chapter 5 by examining the siege of Syracuse. She argues that Plutarch uses this story and Archimedes' role in it to delineate Marcellus's character as philhellenic and to mark the limits of Roman Hellenization. Jaeger also deals with Archimedes' inventions for Syracuse's defense like the Big Ship and the Hand, highlighting the element of humor and surprise that these machines brought to those who came across them.

The same approach is followed when Jaeger analyses in the coda of the second part of her book Claudian's short poem from late antiquity on Archimedes' sphere. 'The sphere and the hand', she says,

have in common the fact that they both record or anticipate the responses of those who see them in action, viewers who marvel at the movements of the machines and the genius of their maker. [123–124]

Chapter 6, the only chapter of the third part of the volume, deals with Petrarch's rediscovery of Archimedes in his works *De viris illustribus* and *Rerum memorandarum libri*. Jaeger shows how the anecdotes that she has discussed in previous chapters take new shape in these two prose works by Petrarch. Petrarch chooses to draw attention to different things and leave others in the background. He also questions and criticizes the ancient sources, showing how well he knows them. In this way, he presents himself as a figure between the distant past and posterity; as a collector, collator, and judge of texts who presents the positive results of his own historical and biographical research; and as a researcher working at the limits of the knowable. The themes of loss and recovery of intellectual tradition are once more in evidence.

Another theme that traverses the whole book is the idea that Archimedes was important to Cicero because he was important to Marcellus, and that he was important to Petrarch because he was important to Cicero. In general, there is an underlying argument according to which the figure of Archimedes was important to many later writers because he was important to Cicero, and his appearance in Cicero shapes the manner in which they use it.

Jaeger's analysis brings to light very promising details concerning Archimedes' 'after life' and concludes with very useful remarks.

She offers, for example, very interesting insights regarding the way in which biographers present their subject matter, emphasizing the importance of politics and ideology in writing biographies. She also pays attention to the emergence of a Roman cultural identity, which constitutes an important underlying theme of the book. She argues in particular that

Cicero incorporates Archimedes' technology into his own program of creating an aristocracy of Romans linked not by noble ancestors but by intellectual achievement. [151]

In line with that, it would have been interesting to explore more works from the Roman period so as to have a more complete picture of what intellectual achievement meant for these people and how it was used for different purposes and with different outcomes. One also feels the need to go further regarding the audience of each work that Jaeger deals with and to say more about Archimedes' own work at his time as well as his specific agenda.

Another issue that could be looked into in more detail is that of patronage, when, for example, Jaeger examines the '*Eureka!*' story and Archimedes' revealing the fraud to Hieron. Although she notices that this story 'may reflect the tension of the early part of Hieron's reign, when he was securing his hold on the city and was perhaps more vulnerable to insult than he would have been later' [17], she does not take this remark any further. I think an analysis of the context and type of Hieron's rule along with an examination in depth of his relationship to Archimedes could bring to light interesting results. The need to explore this relationship of patronage becomes stronger when Jaeger categorizes Hieron and Archimedes as master and slave, accordingly arguing that Archimedes 'does not fit the image of the Greek intellectual' and his 'public nudity might have appeared memorably scandalous to Roman eyes' [7]. The scandalous and laughable picture of Archimedes as a running slave is not in my opinion convincing. Jaeger does not explore what the label 'Greek intellectual' means and does not deal with the relationship between the ruler and the scientist. As her account stands, the idea that Archimedes was of low status is hardly compelling. His identity needs to be explored further and used as a starting point for an account of what being an ancient scientist actually meant in those times.

The scientific identity of Archimedes comes up many times in the book, but Jaeger prefers not to give it too much attention. She states in the introduction that

this book is not about math or the history of math; nor does it attempt to ascertain the historicity of the traditions about Archimedes or the nature of some of his inventions. [7]

Instead, she claims, it is a book about the way in which Romans used and reused Archimedes' story. However, the way in which the Romans used his story is solidly connected with Archimedes' status as a scientist and with the impact of his inventions. Archimedes was part of a scientific community and was discussed as such by later authors. Jaeger states that she wants to differentiate her approach from the ones that put the life of Archimedes in the larger context of the history of science. She says that

when we examine this 'Life of Archimedes' with an eye directed less toward its science and more toward its rhetoric, we can perceive that we see the life of Archimedes only through the eyes of others, first Hieron and then Marcellus. [105]

My objection here is that Hieron himself was treating Archimedes as a scientist. It is hard to imagine otherwise, especially since Archimedes' after life is so much entwined with his achievements and his fame as a man of knowledge. Archimedes was useful to the king exactly because he was a scientist, a man of knowledge. It is because of this knowledge that Hieron needed and trusted Archimedes and that Marcellus gave an order not to kill him. Archimedes' scientific identity as well as issues of power and knowledge come out, then, as of great importance since rhetoric and science seem to go together.

*Archimedes and the Roman Imagination* is the first book to explore the after life of Archimedes and, although there is room for further analysis, it is a very useful work on the numerous Archimedeses that have come down to us. Both classicists and historians of science will find this book very interesting and helpful, and I am confident that the stories on Archimedes will stimulate their imagination as they did for his Roman descendants.