

MICHAEL SERVITUS

[by John H. Lienhard](#)

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Today, a peculiar fable about blood and martyrdom. The University of Houston's College of Engineering presents this series about the machines that make our civilization run, and the people whose ingenuity created them.

The early Christian writer Tertullian once said, "The blood of martyrs is the seed of the Church." That takes on a strange irony in the case of Michael Servitus.

By the mid-1500s the question of how blood flows through the body was becoming a real puzzle. For 1400 years we'd believed what the Roman doctor Galen told us.

Galen thought the liver converted food into blood. The veins carry the blood to the heart. There it leaks through the septum into the arteries. The arteries carry it to our extremities, where the body consumes it. It was a once-through theory.

William Harvey straightened all that out in 1628. He told us blood gets from the arteries to the veins through invisible capillaries. He realized that blood isn't made in the liver at all. It recycles after the lungs refresh it.

Harvey's idea wasn't original. But he worked it out in clear-headed, modern terms. He supported the theory with ingenious experiments.

Before Harvey, blood flow was a philosophical -- even a theological -- issue. For example, the way the alchemist Paracelsus attacked Galen was to compare blood flow to the cyclic action of rain and evaporation.

This is where the theologian Michael Servitus comes in. In 1546 he wrote a book on spiritual regeneration. He attacked the doctrine of the Trinity. He thought the Nicene Creed dishonored the idea of redemption. That was dangerous thinking during the Protestant Reformation.

Servitus -- almost incidentally -- described the regeneration of blood in the lungs. It was part of his theology of regeneration. But it was quite accurate. Servitus told us just what Harvey did, 85 years later.

Servitus sent a copy of his book to Calvin. Calvin took it very badly. He ordered Servitus's arrest and trial as a heretic. A tribunal sentenced Servitus to burn in a fire fueled by slow-burning green wood and his own books.

Harvey surely heard of Servitus's theories. It's unlikely he ever read Servitus's ponderous text. But others had plagiarized the parts on blood flow.

And what about Calvin? Well, Servitus's ghastly death discredited him. Servitus's martyrdom led to Church reform. In that sense, his blood really was the seed of the Church. And his blood-flow theory! Well, that was a major seed of modern medicine.

I'm John Lienhard, at the University of Houston, where we're interested in the way inventive minds work.

(Theme music)

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Boorstin, D.J., *The Discoverers*. New York: Random House, 1983, Chapter 47.

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