

## **Daniel Bernoulli, “I can Fly”**

**Swiss Mathematician. Born: Groningen, Netherlands, Jan 29, 1700.**

**Died: Basel, Switzerland, March 17, 1782**

Daniel was one of a line of Swiss Mathematicians. His Uncle Jacob, his father, Johann were both published mathematicians. Two brothers, a couple of nephews and a cousin were also mathematicians or scientists. The family left the Netherlands in 1705, driven out of the country because of their Protestant beliefs.

Daniel's father wanted him to go into business, but an older brother taught him Geometry and he went in that direction, landing a teaching job in St. Petersburg, Russia, in 1725. He had studied medicine, and obtained a medical degree in 1721. Returning to Switzerland in 1733, his interest in science grew. He became one of the first non-English speaking scientists to accept the Newtonian view of the universe without reservation.

He wrote in a book on the flow of fluids, in 1738, that the “as the velocity of a fluid increases, the pressure decreases”. This is still known as Bernoulli's principle and is a basis of airplane flight. He did further experiments with the behaviour of gasses under different pressure and temperature. He used the ideas of tiny particles of a fluid (molecules and atoms), and probability theory to come up with a mathematical explanation of what he was observing. He never did it rigorously enough, but the idea was later extended by Joule, Maxwell, and Boltzmann.

Later mathematical work was in probability and statistics. Information for this has been Isaac Asimov's *Biographical Encyclopedia of Science and Technology*.