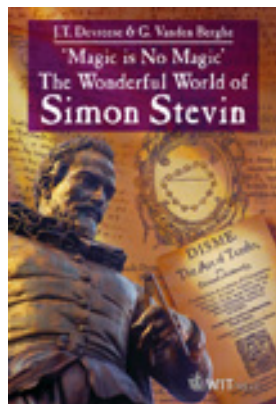


‘Magic is No Magic’ The wonderful world of Simon Stevin *J.T. Devreese and G. Vanden Berghe*
WIT Press, Southampton, Boston 2008 (310 p.), hard cover, ISBN 978-1-84564-092-7, €142.50.



Simon Stevin (Bruges, 1548 - 1620, The Hague) is one of the few Flemish mathematicians that are known worldwide. When asking a Flemish person to name a famous historical Flemish mathematician, there is a high probability that he would come up with Simon Stevin. Many items like city squares, lecture series, scientific journals, classrooms, buildings, etc. are named after him. Born in Bruges in 1548, Simon Stevin moved to Leiden in 1581 where he attended the newly founded University in 1583-1590. Somewhat later he becomes good friends and private tutor of Prince Maurice of Nassau. He remains a devote adviser to the Prince on many diverse subjects. Therefore, being strongly connected to the house of Nassau, some people might think wrongly that he was a Dutchman. Of course when Stevin was born, the distinction was not as clear as it is now. The Low Countries ranged from Ar-

tois in the North of France to Friesland. It was only in 1585 that Alexander Farnese took Antwerp after which the Catholic South was separated from the Protestant North. Although he spent most of his active life in the North, Stevin has always mentioned in his books that he was from Bruges.

The impact of Simon Stevin on science, politics, and culture can not be underestimated. But I believe that not many of those people who can remember him as a famous mathematician could list all or even a few aspects of what he was famous for. Those who ask the question and those who cannot answer it can google away on the internet since much is available there, but much more can be found in this richly illustrated and amply documented book.

Simon Stevin was a true engineer with many inventions and patents, but he was also a strategist, a politician, a mathematician, he was creative with Dutch language, a didactic genius, an economist, and much more. He was the product of his time: the real *homo universalis* of the Renaissance period. That period brought new insights, rediscovering the old Greek and Latin knowledge. Book printing played an important role in spreading this knowledge all over Europe. The famous printing house of Christopher Plantin in Antwerp was a main publisher of Stevin's books. Thus the brilliant wit of Simon Stevin made him the right person at the right place and at the right time.

Besides a precise evocation of the political and religious background of those days, this book highlights in its chapters several of Simon Stevin's contributions. One of his most important contributions was his promotion of the decimal system. The monetary system, but also measures like weight and length had the most chaotic counting system that were even different from place to place. Simon Stevin's contribution here was his work *De Thiende* translated as *The Disme, the art of tenths*, a French translation was included in his *L'Arithmetique* and other translations in several other languages followed. It is quite astonishing to realize how complex numerical computations are when one does not have a decimal notation for numbers as we are all so familiar with today.

But Simon Stevin was also a true engineer and inventor. He invented gears for windmills and sluice constructions, sailing cars, and this like – water and wind being typical Dutch raw material – but he also wrote on architecture, military science, bookkeeping (in particular double entry bookkeeping), interest calculation, architecture, politics, etc.

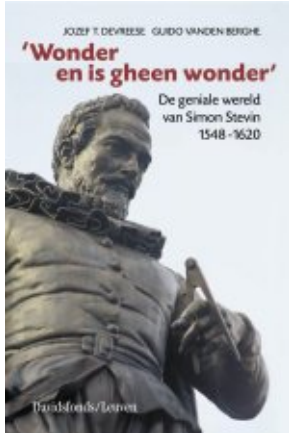
His immortal work on statics and hydrostatics in 1586 is his major innovative achievement. The *Beghinselen der Weeghconst* (the art of weighing) and *De Beghinselen der Waterwichts* (hydrostatics) are indeed the first important contributions in these areas since antiquity. We find here, as in his other works, the perfect combination of the teacher, the engineer and the mathematician/physicist. In his

A rectangular box containing a handwritten signature in dark ink. The signature is written in a highly stylized, cursive script that is characteristic of the 16th or 17th century. The name appears to be 'Simon Stevin'.

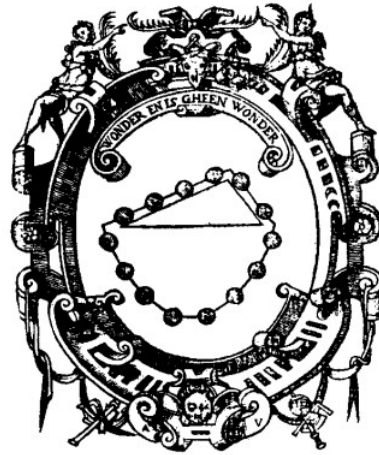
Simon Stevin's signature



Simon Stevin's statue in Bruges



Dutch version of 'Magic is no magic'



Logo and motto of Simon Stevin

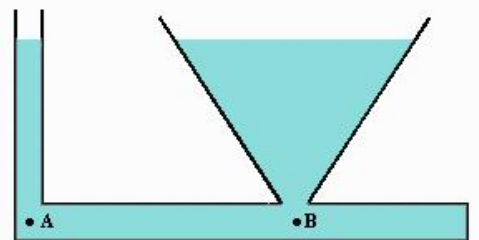


Book on statics

view, theory and practice should always go together. On the cover page of the book one can see the *Clootcrans* (wreath of spheres) by which he proved a basic physical law: the impossibility of a *perpetuum mobile*. Actually this could justly be called Stevin's law. This chain of balls has more balls, and hence more weight, on the longer ramp than on the shorter one, and thus, assuming there is no friction, a perpetual motion would result. However, Stevin showed that, if friction were removed, there would not be any motion because the system is in an equilibrium. He was obviously so proud of this, that he used the figure as a logo on many of his books published since. It is also on found his gravestone.

On the same image one will also discover Stevin's motto *Wonder en is gheen wonder* (magic is no magic). This was also used as the title for the preceding Dutch version of this book (Davidsfonds, Leuven, 2003). The explanation is simple. It seems like a miracle that the chain of balls is not rolling in perpetual motion, but when one thinks about it scientifically, it is not a miracle at all. This was Simon Stevin's conception of what science should be, just like he persistently coupled theory and practice. One is impossible without the other. A science teaching paradigm that seems to be recently rediscovered.

In his book on hydrostatics we also find an explanation of what is nowadays known as the hydrostatic paradox. This was about half a century before Pascal. Note also that this was written before he was entering in the service of the Prince of the Republic. After this work he divided his interest over many different subjects and became the *homo universalis* as we know him. One might wonder what else he could have achieved had he devoted his life to one part of science only.



Hydrostatic paradox: the large amount of water above B is in equilibrium with the small amount of water above A

But he was interested in almost everything. For example, his influence on the Dutch language is not to be underestimated. Almost all his work is written in Dutch. He wrote a didactical survey text on the principles of perspective for the Prince. These were just discovered by painters of those days and caused a revolution in graphical arts. But he also wrote on music, on astronomy, fortifications, etc. He became quartermaster of the army in 1604. His lessons to the Prince on mathematics, astronomy and bookkeeping were collected in his *Wisconstighe Ghedachtenissen* (mathematical thoughts) and were published in 1905-1908 and translated in Latin and in French.

Besides his scientific career we read in this book of course also a lot about his personal life and character, but not too much though. Partly because not much sources are available there. For example the precise circumstances concerning the time of his birth and death are curiously still unavailable.

This is a richly illustrated and very well documented book that is as broad as Simon Stevin's interests were broad. It is a delight to read for everyone with the slightest interest in science and history.