

Wilhelm Schickard Biography

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Contents

Wilhelm Schickard Biography.....	1
Contents.....	2
Biography.....	3

Biography

Born in Herrenberg, Germany, Schickard was a brilliant student. By the age seventeen, he had already received his B.A. in theology and Oriental languages from the University of Tübingen. Continuing his studies, Schickard received his M.A. in 1611. In 1617 he met astronomer Johannes Kepler (1571-1630), who inspired Schickard's interest in mathematics and astronomy. While toiling over the many tedious calculations necessary in astronomy work of that time, Schickard's thoughts turned to the notion of mechanically performing mathematical calculations. Although the discovery of logarithms and logarithmic tables by John Napier (1550-1617) several years earlier had greatly simplified the process of multiplication and division, Schickard sought to develop a calculating machine to completely automate these functions.

In 1623 Schickard wrote a letter to his friend Johannes Kepler, describing his progress in developing such a machine. Schickard placed Napier's bones, the logarithmic calculating device invented by Napier, on cylinders that were selected by the turn of a dial. Employing the use of accumulator wheels allowed six digit calculations to be performed. Results were generated by turning large knobs, while the answers were viewed through small windows. Dubbed a calculator-clock, the machine was capable of performing all four mathematical functions, but before accounts of the invention were publicized to the world, the machine became lost in the chaos of the Thirty Years War. Schickard set about building a second machine; unfortunately, it, too, was destroyed by fire while still under construction. It appeared that all of Schickard's designs and records were lost as well--a great misfortune as it would take fifty years before the advancements achieved by Schickard could be duplicated by Gottfried Leibniz (1646-1716) and later inventors.

In 1935 while researching a book on Kepler, a scholar found a letter from Schickard and a sketch of his calculator, but did not immediately recognize the designs or their great importance. Another twenty years passed before the book's editor, Franz Hammer, found additional drawings and instructions for Schickard's second machine and released them to the scientific community in 1955. A professor at Schickard's old university, Tübingen, reconstructed the calculator based upon Schickard's original plans; it is still on display there today.

Schickard died of bubonic plague in 1635. Unfortunately, the significance of his work was not fully appreciated until 320 years later.