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History Corner: Henry Voigt Silvio A. Bedini

Among the notable European artisans who emigrated to the American colonies during the pre-Revolutionary period was Henry Voigt, a talented mechanic who contributed significantly to science and technology in the new republic. Little is known about his early years except that he was born in 1738 in Germany, where he was trained as a watch and **clockmaker**. Voigt, whose name is frequently rendered as "**Voight**," was employed during a period in his youth at the Royal Mint of Saxony at Saxe Gotha. It was there that he became familiar with the construction and operation of the various equipment then used in coinage, knowledge that he was to apply later in the U. S. Mint. It has been speculated that he may have been a brother of the renowned scholar Johann Heinrich Voigt (1751-1823) of Gotha. Author of numerous works on mathematics, astronomy and meteorology, Johann Voigt was professor at Gotha and at Jena.

Assisted in Construction of Orrery

It was probably in about 1760 that Henry Voigt emigrated to Pennsylvania, and found employment for a time in Norriton with the clock and instrument maker David Rittenhouse. In 1770 and early 1771 Voigt assisted in the construction of the orrery that Rittenhouse sold to the College of New Jersey (later Princeton University). Voigt may have assisted also in the construction of the second orrery Rittenhouse made for the University of Pennsylvania.

During the next several decades Voigt became involved in a number of enterprises in Pennsylvania. In 1780 he owned and operated a wire mill in Reading, and shortly thereafter he moved to **Philadelphia**, where he established himself as a **clockmaker** with a shop on Second Street between Vine and Race Streets. In about 1786 he developed a friendship with the inventor John Fitch, and in the following year he became a shareholder in

Fitch's company for producing steamboats. Two years later he designed improvements in steam boilers, and submitted drawings and descriptions of various improvements to the American Philosophical Society. In 1791 Voigt and Fitch applied jointly (and unsuccessfully) for a position as assay master in the recently established Mint. The joint application stated, ". . . John Fitch is a goldsmith by trade and flatters himself that he could render essential service to his country as assay-master." In 1792 Voigt entered into a short-lived partnership with Fitch to manufacture steam engines.

In his autobiography, Fitch frequently mentioned Voigt, revealing a conflict that existed between himself as a man of naked ideas and his partner Voigt as a brilliant and intuitive mechanic who could translate Fitch's dreams into workable reality. He remembered Voigt as ". . . a Plain Dutchman, who fears no man, and will always speak his sentiments which has given offence to some of the Members of our Co., and some of them have affected to have a contemptible opinion of his Philosophical abilities. It is true that he is not a man of Letters, nor Mathematical knowledge, but for my part I would depend on him more than a Franklin, a Rittenhouse, an Ellicott, a Nancarrow, and Matlack, all combined, as he is a man of superior mechanical abilities, and Very considerable Natural Philosophy; and as we have made many of the first Geniuses in our Co., many perhaps nearly equal to those whome I have mentioned, it is certain that he has pointed out more defects than them all, and pointed out ways to Remedy those defects, when consternation sat silent in every Brest for the disaster. I soon perceived his mechanical abilities to be much superior to mine."

Applied to be Chief Coiner of Mint

On April 13, 1792 Voigt applied for the position of chief coiner of the Mint. Written in the third person in his own hand, his application provides the little information that is available about his early years, stating

". . . that he in his younger days for several years worked in the Mint of Saxe Gotha in Germany and has gone through all the Branches belonging to the same—that he not only knows how to use every Engine belonging to a Mint, but is able to make every one himself in all its parts Compleat (except engraving the Dies)—and even has made some Improvements in the Machinery whereby a Considerable Expense was saved . . . in the late Revolution . . . he manufactured Guns and Gunlocks for the Army of the United States and erected and carried on a Wire Manufactory to accomodate his Country with that Article for making Wool and Cotton Cards—and introduced several useful Machines for the purpose of expediting manufacturing of Cards—but that when Importation took place your petitioner's Manufactory was ruined and reduced him to straightened Circumstances from a state of Contentment and easy living. "

Recommended by Rittenhouse

Voigt's application was supported by four letters of recommendation, one dated January 21, 1792, from Henry Deberger, Sr. of **Philadelphia**. Two of them, dated April 13, 1792, were from David Rittenhouse and Jonathan Nancarrow. These were accompanied by a petition with numerous signatures and an undated letter from the Revolutionary patriot and **Philadelphia** merchant Timothy Matlack. President Washington approved Voigt's

appointment as chief coiner of the new **Philadelphia** Mint in a letter to Rittenhouse of July 9, 1792, in which he stated, "I hereby declare my approbation of . . . [omitted matter not related to Voigt] the employment of Mr. **Voight** as Coiner." Voigt continued in that position until his death in 1814.

In 1793 Voigt discovered a process for making steel from bar iron which was said to be an improvement over imported cast steel for manufacturing into knives and razors. An announcement in the *National Gazette* on June 25, 1798 reported:

"A correspondent informs us that Mr. Henry **Voight**, an ingenious clock and watch maker in this city, and one of the officers of the Mint of the United States, has discovered the method of making steel from iron, which exceeds the generality of any imported cast steel, when manufactured into knives, razors, &c. It is said that Mr. **Voight** intends communicating this discovery gratis to all the blacksmiths and others interested in iron and steel manufactures, which may prove a considerable saving to the United States, in the importation of the necessary article, as it will then be in the power of every blacksmith to make his own steel."

Although Voigt did not specialize in the making and repairing of mathematical instruments, he was called upon to do so from time to time, particularly in his later years. Among Voigt's friends and most devoted clients was **Thomas** Jefferson, for whom he frequently repaired clocks and watches. Another associate was the architect and engineer Benjamin Henry Latrobe. Late in 1803 Latrobe wrote to Voigt that he had just sent him **Thomas** Mudge's *An Account of the Operations Carried on for Accomplishing a Trigonometrical Survey of England and Wales, from . . . 1784 to . . . 1809* (London, 1799-1811) in three volumes. Latrobe indicated that in the work "a description and Drawing of a Transit Instrument is contained. You will find it in many instances different in principle from yours, but I think it will be useful to you." This related to the transit and equal altitude instrument that Voigt was asked to make by Isaac Briggs. Voigt completed the instrument in time for Briggs to use it in the Mississippi Territory, where he was surveyor general, and for him also to use in establishing an American prime meridian at President Jefferson's direction.

In March of the following year, Latrobe again wrote to Voigt, this time requesting assistance. "Will you have the goodness to let the bearer have my Theodolite. I should be exceedingly obliged to you if it has been convenient to you to put it in order, already, or to finish it before my Clerk leaves town."

In the spring of 1804 Voigt received a contract from the trustees of Princeton University to repair their Rittenhouse orrery that had been damaged during the war. He removed the instrument to his shop in **Philadelphia**, where his son **Thomas** worked on it under his supervision off and on for the next four years. In 1809 Voigt submitted to the American Philosophical Society a drawing of his invention of "improved open and close stoves."

Son Made Clock for Jefferson

After serving an apprenticeship with his father to learn the craft of clockmaking, Voigt's son established his own shop at 44 North Seventh Street, listed in the city directory from about 1811 until at least 1836. **Thomas** was

the maker of a tall case clock which Jefferson required for his astronomical observations and which he kept in his study at Monticello.

Despite his association with so many notables of his time and his own contributions to the shaping of the new republic, relatively little is known about the elder Voigt's life. It is a subject deserving further study.

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